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HERBERT S. LANGFELD
PRINCETON UNIVERSITY

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Carl C. Brigham

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THE PSYCHOLOGICAL REVIEW

CARL CAMPBELL BRIGHAM

1890–1943

In the death of Carl Campbell Brigham at Princeton, New Jersey, on January 24, 1943, psychology lost one of its original and resourceful students.

Carl Brigham did not fit into any ready-made category of his science. He was an able technician in the development of tests of human ability. But he was not merely a test technician: he was a scientist who loved and was proficient in 'brass instrument laboratory psychology.' He was an educator, a logician, a philosopher, and an effective man of action. His keen, humor-loving mind and his gay, urbane personality endeared him to an unusually wide circle of friends, inside and outside his own professional groups.

It is difficult to write of Carl Brigham the scientist without also writing of Carl Brigham the man. He was a New Englander of New Englanders. On his mother's side he was a descendant of John Goss, who came from England with Governor Winthrop in 1630, and of William Brewster, a Mayflower Pilgrim and Ruling Elder who was the fourth signer of the Mayflower Compact. On his father's side he was descended from Thomas Brigham, who came from England in 1635 and became one of the early Freemen of Cambridge, Massachusetts. His grandfather, Henry Augustine Brigham, was an engineer who developed hydraulic gold-mining in California in the 1849 period.

Carl Brigham was born in the old town of Marlboro, Massachusetts, in 1890. His family had long been known as leading citizens of this community, which lies midway between Boston and Worcester. Something of the same spirit of

adventure which sent his grandfather to California in 1849 must early have been active in determining Carl's reactions to his environment because, in spite of many family connections with Harvard College, he decided, after being accepted for admission by Harvard, to transfer his credits to Princeton University. He managed this whole transfer of admission credits himself, thus displaying, it seems, a precocious interest in college admissions procedures, to which in later life he was to make so many important contributions. When he told his father of the change he was greeted by the reply, "If you care enough to go to all that trouble you certainly have my permission to make the change." It is clear that he never regretted his decision for he was always a devoted son of Princeton and of the Princeton class of 1912. His classmates, with the wise judgment of youthful peers, characterized him at graduation as "the most highly educated and learned member of his class." As an undergraduate he was awarded the McCosh Prize in Philosophy. This very fact may have been influential in his later work. There is something 'McCosh-like' in much of Brigham's work. McCosh, president of Princeton from 1869 to 1889, was an able and original philosophical psychologist who made real contributions to the field of perception. After graduation Brigham remained at Princeton as Chancellor Green Fellow in Mental Science. He received the degree of Master of Arts in 1913 and the degree of Doctor of Philosophy in 1916, both from Princeton. Even as an undergraduate he had been interested in the problem of mental measurement, and during his graduate years as well as in his professional life this area of study remained his most active field. His doctoral dissertation was entitled 'Variable Factors in the Binet Tests.'

In 1916 he was made instructor in psychology at Princeton, but this work was interrupted by war service as a member of the re-education division of the Canadian Military Hospital Commission. He resigned this post to become a first lieutenant in the 106th United States Field Artillery. Later he was transferred to the Sanitary Corps, Psychological Service, where he made important contributions. Before the end of

the war, however, because of his great desire to see front-line action he transferred to the new Tank Corps, in which he saw active service.

In the demobilization period following the war he was made assistant to the chief of the Federal Board for Vocational Education. In 1920 he was again summoned to the teaching and research staff of his Alma Mater as an assistant professor. He became associate professor in 1924 and from 1928 until the time of his death he was professor of psychology in Princeton University.

He was married in 1923 to Elizabeth Duffield, who survives him, as does his daughter, Elizabeth Hollister Brigham.

In 1923 he published a book, *A Study of American Intelligence*, based largely upon the results of the examining of recruits in the United States Army during the first world war. This volume received much favorable attention. Seven years later, after prolonged study, he published an article in the PSYCHOLOGICAL REVIEW in which, acting as his own most severe critic, he himself challenged some of the conclusions of the earlier book.

All the freshmen who entered Princeton in 1923 had a novel experience which has now become a common prelude to entrance upon college study. In that year the new student at Princeton was for the first time confronted by an academic aptitude test constructed by Brigham. This test was one of the first aptitude and academic placement tests intended exclusively for college students ever devised. This testing of freshmen at Princeton was repeated in 1924 and, on the basis of the excellent results secured by these examinations, the conservative faculty of Princeton University voted that in 1925 all candidates for admission to the University should take such tests. Knowledge of the success of this procedure spread rapidly in university circles. In 1924 Brigham was appointed chairman of a commission of the College Entrance Examination Board to explore the field of aptitude testing for college students. This led to the offering by the Board in 1926 of what has since come to be known as the Scholastic Aptitude Test. In 1930 Professor Brigham was made Associate Secre-

tary of the College Entrance Examination Board. From that time on until his death he continued to hold important offices in that organization.

During this period of 20 years his leadership to a great extent modified and made scientific the whole set of procedures by means of which new classes are admitted to Harvard, Yale, Princeton, Bryn Mawr, and the other large private institutions which admit freshmen students only as a result of special examination. The development of this work is indicated by the fact that the number taking the Scholastic Aptitude Test in 1926 was 8028, while in 1942, 22,467 college admission candidates took this test. The College Entrance Examination Board is a nonprofit organization, but it annually receives a substantial income from the fees paid by candidates who take its tests. Generous sums from this income of the Board were made available for research and the development of tests under Dr. Brigham's direction. These grants, together with other subventions, made it possible for him to establish a research laboratory with an expert staff and modern calculating machine equipment.

Dr. Brigham brought together in the so-called Class of '77 Laboratory at Princeton a small but complete set of the most modern International Business Machines equipment, including all the principal devices developed by this company to deal with punch-card tabulation and sorting procedures. It was characteristic of Dr. Brigham that he made himself master of all aspects of the new devices for card punching, card verification, card collating, and card tabulating, and the various procedures for automatic recording which have been developed by this company. He operated this complex electric installation with the versatility of a skillful musician.

As a result of detailed item-analysis studies and elaborate consideration of the reliability and validity of his tests he was able continually to improve the instruments which issued year after year from his workroom. As soon as he had assured himself that a new technique was really ready for practical application he would set forth to explain it to the conservative pedagogical workers with whom he was associated in the

councils of the College Entrance Examination Board. In dealing with professors from the older eastern universities and private schools he was a master at presenting the results of his rigorous scientific and statistical research in such a way as to win the understanding, respect, and confidence of men whose training had not made it possible for them to understand the meaning of any technical words in applied statistics. He could explain a whole complex procedure of determining the validities of his tests without using a single technical term. In an official minute the College Entrance Examination Board has said of Dr. Brigham that besides his major contribution of the introduction, development, and scorings of the Scholastic Aptitude Test down through the years he also initiated many other important changes in the Board's procedures. Among those specifically mentioned by the Board itself are:

1. The freeing of the schools from definite prescription of the fields covered by the examinations.

2. The introduction of new examining techniques.

3. The reorganization of the examinations, including English, mathematics, science, foreign languages, and history.

4. The reorganization of the reading procedures to secure higher correlations between the scores reported by individual readers.

5. The discontinuation of the percentage method of reporting the results of the examinations and the substitution of a scale which fixes the grade of the average college applicant at 500 and distributes the scores so that they range approximately from 200 to 800. Any point of the scale may be referred to the per cent of the random college-applicant population falling above or below the mean (500).

Largely as a result of this work Dr. Brigham brought together a comprehensive volume on the analysis of test procedures which was published in 1932 as *A Study of Error*. This book deserved and received most favorable reviews. It has continued to be a source of valuable ideas for expert students since its publication. The review in the *Psychological Bulletin* spoke of it as "the first thoroughgoing analysis of tests and test results."

Many other educational agencies besides the College Entrance Examination Board profited by Professor Brigham's work in test construction. For years he served as consultant for the Cooper Union in New York City in selecting under its remarkable plan of scholarships a class of boys most likely to profit by the instruction of that fine engineering institution. He also was a consultant in testing to the United States Military Academy at West Point and to the Department of State. In 1935 he became chairman of the Fellowship Committee of the Social Science Research Council and prepared for the Council a comprehensive study entitled 'Examining Fellowship Applicants.'

When the present writer was asked in 1940 to become Director of the National Roster of Scientific and Specialized Personnel he requested the Social Science Research Council to nominate Dr. Brigham as one of its consultants to the R ster. This was done, and this enterprise, by means of which for the first time the names of American scientists and technical men and women are made available in a central register for the war effort, owes much to Carl Brigham's ingenuity and hard work. His familiarity with punch-card procedures for the rapid sorting and tabulation and the statistical treatment of large assemblies of data was a great advantage in developing the basic technique of the National Roster. As Social Science consultant to the Roster he assisted in developing the so-called technical checklists in the social science fields, such as sociology, government, and economics. These technical checklists revise upward the procedures previously employed in the cataloguing of jobs in the now famous Occupational Dictionary. The work of constructing checklists and technical codes in the professions for the Roster was arduous and time-consuming. It was done quickly and in the peculiarly finished form that characterized all Brigham's work. The analysis which he collaborated in making of the whole field of economics and of all the products which participate in international economic flow has been characterized by many economists as the most successful of all efforts at a functional picture of what the field of economics actually covers. During

this period Brigham also acted as an adviser to the Adjutant General's Office in matters concerned with the development of the new Army classification tests used in the present war.

How much this hard work in the warm Washington summer of 1940 cost Carl Brigham will never be known. It was done as a contribution to the war effort by a patriotic scientist whose circulatory system had already given him grave warnings of danger ahead.

In spite of a continued and heavy burden of outside work, the focus of Dr. Brigham's interest and the center of his work was always his own Alma Mater. In later years the pressure of research and of the direction of vast national test scoring programs removed him more and more from the undergraduate classroom and even from the direction of the research of graduate students. This was unfortunate for he was a gifted teacher. Although removing himself from Princeton's classrooms, he still contributed, it should be remembered, in a most direct manner to the welfare of each Princeton undergraduate student.

In a series of studies of which the first was issued in 1926 Dr. Brigham analyzed the facts entering into the scholastic achievement of all Princeton students since the first world war. As a result of these studies he developed what was called during the time that the present writer was a teacher at Princeton the 'bogey' of each student. This 'bogey' was later somewhat more pedantically renamed the 'converted school grade.' This score is still in use by the Princeton Committee on Admissions and by Princeton faculty advisers. This bogey-score was really a weighted number, given to each individual, based on a formula including the student's own Scholastic Aptitude score and his preparatory school marks. The predictive nature of this score has been demonstrated over and over again at Princeton. This score is also of the greatest advantage to deans and advisers in really assisting in a basic way students who are 'bright but lazy' or students who are relatively slow in academic learning but unusually conscientious in the number of hours of work that they give to college subjects.

On the basis of Dr. Brigham's studies, Princeton initiated the procedure of allowing able students to enter with advanced standing when matriculating. Brigham also devised special procedures by means of which candidates for admission to Princeton from the West and South could be accepted in spite of the local differences in college preparatory curricula of the schools in these areas as compared with New England or Middle States schools.

Dr. Brigham was always greatly interested in professional psychology. In 1929, 1930, and 1931 he was secretary of the American Psychological Association.

Unlike some experts in so-called paper and pencil tests Dr. Brigham liked to work with his hands. The Princeton Laboratory of Psychology has a number of pieces of apparatus which attest his ingenuity. Cabinet making and the refinishing of antique furniture were avocations at which he excelled and which his students and colleagues liked to share with him when they were invited to his always hospitable home.

In summary, one who remembers Dr. Brigham is tempted to use many adjectives in characterizing this effective scientist who did so much to make modern applied psychology sound and widely accepted. He was earnest and direct in all scientific matters. He was meticulous in the perfection of his scientific work. He was an anti-pedant. He was urbane. As his own classmates said of him in his undergraduate years, he was, to be sure, a man highly educated and really learned, but above all his associates knew him and will always remember him as a gay and friendly fellow human being.

LEONARD CARMICHAEL

President of Tufts College

THE EGO IN CONTEMPORARY PSYCHOLOGY [1]

BY GORDON W. ALLPORT

Harvard University

I. Introduction

One of the oddest events in the history of modern psychology is the manner in which the ego (or self) became sidetracked and lost to view. I say it is odd, because the existence of one's own self is the one fact of which every mortal person—every psychologist included—is perfectly convinced. An onlooker might say, "Psychologists are funny fellows. They have before them, at the heart of their science, a fact of perfect certainty, the one warrant for the being of all other things, and yet they pay no attention to it. Why don't they begin with their own egos, or with our egos—with something we all know about? If they did so we might understand them better. And, what is more, they might understand us better."

Back in the 1880's, of course, it was good form for James, Royce, Dewey and their contemporaries to speak freely of the ego, the self, or even the soul. The soul, to be sure, was giving way under Wundt's onslaughts, and everyone was finding it exhilarating to shake off the alleged 'theological domination,' and to emerge unfettered and positivistic into the era of the New Psychology. They forgot that their predecessors had not endorsed the soul because of their theological leanings, but rather, because associationism did not recognize or explain to their satisfaction the *coherence*, *unity*, and *purposiveness* which they thought prevailed in mental life. Granted that the 'soul' also failed to explain these properties, it at least called attention to their existence.

After the expulsion of the soul, these unifying properties of mental life were occasionally referred to under the designa-

[1] President's address to the 14th Annual Meeting of the Eastern Psychological Association, Hunter College, April 30, 1943.

tion of 'self.' For a time, thanks to James, Calkins, Prince, and the French psychopathologists, 'self' was a reasonably popular concept. But gradually it too fell into disuse.

The total eclipse of soul and the partial eclipse of self were due in part, as I have just said, to the rise of positivism in psychology. Positivism, we all know, is a scientific program for moral re-armament, whose imperatives include absolute monism, absolute objectivity, and absolute reductionism—in short, absolute chastity. From this ascetic point of view, subjective certainties are suspect, selves seem a bit indecent, and any hint of metaphysics (that is, of non-positivistic metaphysics) savors of laxness. As Gardner Murphy pointed out to this Association one year ago there was no prestige to be gained from a psychology of the self (**39**).

But for all its sumptuary control, positivism had one undisputed merit: it engendered a wholesome dislike for question-begging explanations. Much of the older psychology, it showed, suffered from a tendency to labor over words as if words were the essence of things. Thanks to positivism faculty psychology, resting as it did on verbal realism, became discredited, and dialectics fell into disrepute. Much of self-psychology, we must now admit, dwelt on the unenlightening plane of dialectics. Its statements were often redundant or circular. In the manner of Gertrude Stein it sometimes asserted that a self is a self is a self. Not being, by nature, especially lyrical, psychologists failed to see any deeper significance in this exalted formula. Quite understandably they refused to admit such a stammering self to the gray citadel of their laboratories.

But when a concept becomes taboo it is probable that the taboo will irradiate to cover a whole range of problems associated with the concept. Something of this sort seems to have happened. It is not only the soul and the self that suffered ostracism, but along with them a vast array of problems having to do with the coherence and unity of mental life, with pride, ambition, and status, with values, ideals, and outlook on the future. The eclipse, of course, has not been total, but it has been considerable.

As if to compensate for the neglect of these interests within the field of psychology proper, psychoanalysis rose upon the horizon emitting a spectacular, if sporadic, light. Small wonder that the world at large turned to psychoanalysis for guidance in dynamic psychology. There was precious little other guidance to be had. I am inclined to believe history will declare that psychoanalysis marked an inter-regnum in psychology between the time when it lost its soul, shortly after the Franco-Prussian War, and the time when it found it again, shortly after World War II.

Until psychoanalysis becomes finally fused into a broader and more adequate psychology, it may take pride in having preserved and advanced the study of certain functions of the self that positivistic psychology had consigned to oblivion. It may take credit too for preserving one term, more or less cognate with 'self,' from the dark taboo of which I have spoken. 'Ego' has featured prominently in psychoanalytic literature from its beginning. This term I am now appropriating to signify the recentering that is taking place in psychological theory.

But it is not from psychoanalysis alone that we draw our threads. The position of the ego in contemporary psychology is determined by certain other historical trends as well.

II. Main Conceptions of the Ego

Among the different conceptions of the ego found in psychological literature the following are certainly the most important:

1. *The ego as knower.*—The nominative form of the word ego implies that some subject is busily engaged as Brentano would say in 'intending' his relations to the universe. The problem of the knower or 'Pure Ego' has been of little interest to psychologists since James gave it his lengthy *coup de grâce* in the *Principles.* It is enough, says James in effect, to admit that knowing goes on. A separate knowing-ego is not a necessary assumption. For phenomenologists (**4, 42**) and personalists (*e.g.*, **37**), of course, the problem of the subject-object relationship remains uppermost. But for the

most part, since the time of Brentano and James, psychologists have passed the problem by.[2] For our purposes, we need only record this first usage, and note its relative rarity.

2. *The ego as object of knowledge.*—Some investigators have set themselves the problem of the nature of our experience of the self (**2, 22, 33**). This approach, limited as it is to the deliverances of introspection, has not been particularly rewarding. It yields relatively unenlightening localizations for the ego which is felt to lie 'between the eyes,' or to consist of 'motions in the head,' or to be situated 'between right and left,' 'between up and down,' 'between behind and before.' Following this line of investigation Horowitz came upon such a diversity of results (reports locating the ego in the head, heart, chest, face, brain, genitals) that he concludes "the localization of the self as it is reported in the literature quoted, in the responses on our questionnaire, in informal discussion, in the investigation of children, is not the basic phenomenon one might hope for to ease an analysis of the structure of the self and personality" (**22**, p. 386).

There seem to be only two facts upon which there is general agreement. (1) Infants, all writers concur, do not recognize themselves as individuals; they behave in what Piaget calls an 'undifferentiated absolute' composed of self and environment. Only gradually and with difficulty does a segregated ego evolve. (2) The ego of which we are aware is variable in its dimensions. Sometimes it includes less than the body and sometimes more. In a semi-doze we lose all sense of our egos though we may be conscious enough of impersonal items. Our feet perhaps are suddenly perceived as strange objects not belonging to us. In pathological conditions, we know, remarkable experiences of depersonalization take place (**7, 10**). Conversely, we sometimes think of a tool we are using as parts of our extended ego-system, and at

[2] Private correspondence with Koffka concerning his own usage of the term brought out the interesting fact that in writing his chapters on the ego he had never thought of ego in the rôle of the knower (**28**). "To be quite frank, I never put this question to myself." He adds, "That my solution will be similar to Brentano's I doubt. At the moment it seems to me that it will be found in the theory of Ego subsystems, more particularly in the relation of the Self-system to other Ego-systems."

times we regard our children, our lodge, or our ancestors as an intimate part of our extended selves. It is agreed that in this manner the ego-systems of which we are aware contract and expand in a most variable fashion (33).

3. *The ego as primitive selfishness.*—A century ago Max Stirner wrote *Der Einzige und Sein Eigenthum* (49), a volume in which he developed the thesis that man is by nature unalterably egoistic. In 1918 the French biologist Felix Le Dantec handled the same theme more brilliantly in his *L'egoïsme: seule base de toute société* (29). Unquenchable egoism is the foundation of the social edifice, says Le Dantec, and hypocrisy is its keystone. Psychologists are partial to such hard-headed realism, and have themselves gone far in unveiling the hypocrisy in man's nature. Projections, rationalizations, defense mechanisms have been exposed for what they are—the whitewashing of ego-centric motivation. During this century psychologists have joined with historians, biographers, novelists in the fashionable sport of debunking human motives.

4. *The ego as dominance-drive.*—Related to this view of primitive egoism, we find many investigations that deal with dominance feelings, with ascendance, with pecking orders, with euphoria. From this point of approach the ego is that portion of the personality that demands status and recognition. The negative states of anxiety, insecurity, defensiveness, resistance are just as truly indicators that whenever the ego is debased there arise impulses for its defense and restoration to status.

5. *Ego as a passive organization of mental processes.*—Psychoanalysis, we all know, has contributed much to the interpretation of human nature in terms of egoism. Its whole theory of motivation is based upon the assumption of hedonistic self-interest. But in psychoanalysis egoism, oddly enough, is not ascribed to the ego, but to the urges arising from the id. For Freud the ego proper is a passive percipient, devoid of dynamic power, 'a coherent organization of mental processes' that is aware of the warring forces of the id, super-ego, and external environment (16). The ego, having no

dynamic power, tries as well as it can to conciliate and to steer the warring forces, but when it fails, as it often does, it breaks out in anxiety. The ego is born of restraint of the instinctual impulses, and it continually needs strengthening. But even when through the analytic process it is strengthened, it is still essentially nothing more than a passive victim-spectator of the drama of conflict.

Dissatisfied with Freud's denial of dynamic power to the ego, we know that later psychoanalytic writers, French (**14**) and Hendrick (**20**) among them, have ascribed more *momentum* to the ego. It is the agent that plans, that strives to master as well as to conciliate the conflicts. One analyst, Heinz Hartmann, departing considerably from Freud, holds that "adaptation to reality—which includes mastery of it—proceeds to a large extent from the ego and in particular from that part of the ego which is free from conflict; and it is directed by the organized structure of ego-functions (such as intelligence, perception, etc.) which exist in their own right and have an independent effect upon the solution of conflicts" (**18**, p. 214). To such writers the ego-ideal is no longer, as it was with Freud, a passive reflection of the superego, which in turn is conceived as a mere legacy of the parent. The ego through its ideals reaches into the future, becomes an executive, a planner, a fighter.

6. *Ego as a 'fighter for ends.'*—We are brought then, by some of the more modern psychoanalysts to a position not unlike that of McDougall, or of James in his more teleological moments. For McDougall self-regard was the master and controlling sentiment in whose interest all other sentiments function (**34**, p. 383). The phrase 'fighter for ends' I borrow from James (**25**, I, p. 141), who at times was intensely dynamic and personalistic in his conception of the self.

The purposive view of the ego may be linked to Koffka's postulate that there is ever active "a force which propels the ego upwards" (**28**, p. 670). The position is represented too in those dynamic psychologies that recognize the subservience of the biological drives to one central drive of ego-satisfaction. One of the most forceful expressions of this point of view

is to be found in Goldstein's *Human nature in the light of psychopathology.*[3]

7. *The ego as a behavioral system.*—In spite of his postulation of "a force which propels the ego upwards," Koffka's position is characteristically somewhat less dynamic than that just described. The ego, he says, is only one segregated system within an homogeneous field. Much behavior occurs with no reference to the ego. Not all perception, not all action, not all emotion, not all consciousness, are related to an ego-system. The ego varies widely in its boundaries from time to time, and under certain circumstances acts as a system which determines the course of events as does any other dynamic system according to the theory of Gestalt. But much of the time behavior is free from the influence of an ego-system.

More influential because of its experimental fruitfulness is Lewin's treatment of the subject (31, p. 181). Although he seldom uses the term ego he too allows for a central subsystem within the person. Not all behavior is ego-linked, but many kinds of experimentally obtained results cannot be accounted for without referring to the special types of tension that exist whenever the ego is 'engaged.' The shifting aspiration level is, most obviously, a phenomenon of ego-tensions. Satiation, substitution, encapsulation, resistance, irreality, power-field are among the Lewinian concepts whose characteristics represent various properties of ego-tensions.[4]

It is clear that Lewin, no less than Koffka, wishes to avoid thinking of the ego as a single entity, and prefers to regard it

[3] "On the basis of our discussion I believe we are in no way forced to assume the existence of special drives. . . . They are special reactions in special situations, and represent the various forms by which the organism as a whole expresses itself. . . . The traditional view assumes various drives which come into the foreground under certain conditions. We assume only one drive, the drive of self-actualization, but are compelled to concede that under certain conditions the tendency to actualize one potentiality is so strong that the organism is governed by it" (17, pp. 144 f).

[4] A particularly suggestive contribution of Lewin pertains to the difference between nationalities in terms of the relative ease with which the ego becomes 'engaged.' Thus the American is less defensive, less touchy, less reticent than the German, due to the fact that the barriers of the German's ego lie near the 'surface.' He protects himself against familiarity and intrusion; whereas the American leads a much more 'public' life and protects only the 'core' of his personal life from public gaze (32).

as the variable set of forces that are aroused whenever the person enters into some novel and perhaps dangerous relation to his environment.

8. *Ego as the subjective organization of culture.*—In recent years, as everyone knows, there has been a drawing together of psychology, psychoanalysis and social anthropology. The resulting commensalism has produced a new conception of the ego. The picture of the selfish and unsocialized ego bequeathed us by Stirner and Le Dantec has been broadened. Sherif, for example, points out that although the ego is a 'genetic psychological formation,' yet it is acquired by the child under the ceaseless impact of influence by parents, teachers, and associates, with the result that we must say that the ego "is chiefly made up of social values" (**48**, p. 179). Since the process of segregating the ego in childhood is achieved largely by giving the child a name, a status, a code of behavior, a social sense of guilt, and social standards for making his judgments—Sherif concludes that the ego is nothing but the social part of man (**48**, p. 186). This author's position is extreme, for if the ego is nothing but 'the social in man,' one wonders what to call all the anti-social impulses and the solitary strivings that are normally called *egoistic?* Cantril's view is similar to, but less extreme than, Sherif's. Cantril admits that "a person's ego and, consequently, the way in which he regards himself, are by no means always entirely bound by the surrounding culture" (**5**, p. 44). But yet what an individual regards as himself is undeniably, in large part, socially determined. When his nation's flag is torn down *he* is insulted; when disparaging remarks are made of his parents, *he* is involved; when his political candidate loses a contest, *he* has been defeated.

By stressing the cultural content of the ego, these authors in effect eradicate the artificial Freudian distinction between ego and superego. They also rescue the ego from the anti-social solipsism of Stirner and Le Dantec and make of it a socialized agent ready to enter as an integrated unit into the complex relations of social life.

From this historical glance I have omitted many writers

who have made their contribution to the literature of the ego. But, nevertheless, I believe, I have mentioned the chief ways in which, up to now, the ego has been conceived, viz., (1) as knower, (2) as object of knowledge, (3) as primordial selfishness, (4) as dominator, (5) as a passive organizer and rationalizer, (6) as a fighter for ends, (7) as one segregated behavioral system among others, (8) as a subjective patterning of cultural values.

The question immediately arises as to whether these eight uses of the term ego have anything in common, or whether, as is often the case, a single term is allowed to obscure entirely different problems. Is the ego as knower the same ego that seeks status? Is the me that is known also a fighter for ends? Has the ego system proposed by Koffka any kinship with Freud's ego who attempts through insight to reclaim the id?

These are questions that cannot yet be answered. We cannot say whether these eight conceptions reflect irreconcilable theories, whether they shade imperceptibly into one another, or whether they are all ultimately to be subordinated under one inclusive theory of the ego.

In favor of the last possibility I should like to point to recent experimental studies which, if I mistake not, lend support to several of these conceptions simultaneously. The experiments result in one common finding, namely, that ego-involvement, or its absence, makes a critical difference in human behavior. When a person reacts in a neutral, impersonal, routine atmosphere, his behavior is one thing. But when he is behaving personally, perhaps excitedly, seriously committed to a task, he behaves quite differently. In the first condition his ego is not engaged; in the second condition it is. And it is my belief that in most of the experiments I shall report one finds that the ego is acting in several, if not all, of the eight capacities I have listed. In other words, *ego-involvement* is, as the phrase implies, a condition of total participation of the self—as knower, as organizer, as observer, as status seeker, and as socialized being. But now for the experimental evidence.

III. Experimental Evidence

1. *Generality and specificity.*—A few years ago I found myself involved in a controversy in the field of personality. Certain experimenters claimed that their findings demonstrated a situational specificity in human conduct. For example, a child, honest in one situation, would not be found honest in another (**19**); a person confident of one judgment would not be confident of another (**53**). Whole books were written in defense of specificity (**50**). Other investigators, by other methods, found a person honest in one situation to be honest in another (**35**); a person confident in one judgment to be confident in another (**26**); and whole books were written in defense of generality (**1**). It was a pleasant battle while it lasted. An arbitrator arose, a peacemaker by temperament—Gardner Murphy was his name—and he proposed a compromise. "Honesty," he suggested, "is either a general characteristic or a set of specific habits, depending on your interest and your emphasis" (**38**, p. 385). Murphy was right, but it was not until recently that the deciding interest and critical emphasis became clear at least to me. For my own belated insight I am indebted to an experiment by Klein and Schoenfeld (**27**).

These investigators gave to a group of subjects a series of mental tests under two experimental conditions. In the first, the atmosphere was neutral, dull, *non ego-involved*. The workers were merely laboratory subjects going through routine motions. After each of the six tests they were required to rate the degree of confidence they felt in the accuracy of their performances. Between the six tests there was little consistency in these certainty ratings. After an interval of time, a second equivalent set of tests was administered and the atmosphere was markedly changed. The subjects were placed under greater strain, were told to try hard since the results of these 'intelligence' tests would be entered on their college records. The shift in atmosphere was effective. The confidence ratings became markedly consistent. A student who felt assured in one test felt assured in the other five;

whereas a student who lacked confidence in one of his performances generally lacked confidence in the other performances. The authors conclude that confidence is a personality trait when the ego is involved, but that it is specific to each situation when the subject has no deep interest at stake.

This experiment supplies the hypothesis needed to settle a long-standing controversy. When there is ego-involvement there are general traits; when there is no ego-involvement there are no general traits.

From an entirely different source comes evidence of the same type. In connection with its polling investigations the Office of Public Opinion Research has found that *intensity* of feeling goes with *consistency* of opinion (**6**, Ch. 3). For example, in the pre-Pearl Harbor era it was found that those who felt most intensely in favor of aid to Britain were, by and large, those who endorsed all sorts and varieties of interventionist propositions. On the other hand, those who were lukewarm in their support of aid to Britain were far more inconsistent and specific in their answers. Sometimes they gave interventionist, and sometimes isolationist, replies. The measure obtained between the intensity scale and the generality of the attitude was a coefficient of correlation of +.63.

2. *Judgment.*—Eli Marks worked on judgments of skin-color among Negroes. He found it, in part, to be a function of the objective scale but, in part also, a function of an egocentric scale. A Negro of medium coloration is likely to be judged dark by a Negro of lighter complexion, and as light by a Negro of darker complexion (**36**). For decades psychophysicists have dealt with judgments of hue as a function of wave length, but Marks makes clear that judgments of hue may be also a function of one's sense of social status. Wave length is perceived by the sensitized retina, but it is perceived no less by the sensitized ego.

In the field of simple predictive judgment, it was found in the public opinion polls of 1940 that of the people who were strong Willkie supporters, 71 per cent predicted that he would win the election; of those who were weak Willkie supporters,

only 47 per cent made this prediction (6). Assuming as we must that intensity of an attitude indicates ego-involvement, we find here a clear quantitative demonstration that a 24 per cent difference in the number of predictions exists when the ego-regions of the presonality are engaged. Admittedly, the ego's wish is only one factor in predictive judgments, but if conditions are right it can become the crucial factor as it did in these 24 per cent.

Polling research has uncovered yet another important fact concerning judgment. If you ask respondents to tell you to your face what they think about our allies, the British, or about some minority group in this country, or even about their own educational level, you obtain one set of results; but if you ask them to write their answers to the same questions privately and deposit them in a padlocked ballot box, on the average your results will be significantly different (6, Ch. 5). Now this difference between open and secret expressions of opinion seems to exist only when the answers might jeopardize the respondent's sense of status or affect his prestige in the interviewer's eyes. The discrepancy is great enough to warrant the use of secret balloting whenever questions are of a type that might expose the person to humiliation.

Judgments concerning one's self are remarkably interesting things to study. We know, for example, how inaccurate people are in rating their own economic status. Nearly all prefer to overlook the objective evidence and to identify themselves with the great middle class (6). We know something about the distortions that result when people report their own traits. Frenkel-Brunswik found the self-protective devices so powerful that her subjects would omit, justify, or completely reverse the facts, in their accounts of their own deficiencies (13). Although it is trite to point out what all psychologists know so well, that lack of objectivity is the rule when our egos are involved, yet it is not trite to remark that very little work has been done on the extent and nature of the distortion, nor upon the curious and momentous question why it is that some personalities attain objectivity even in

the face of extreme ego-involvement. Insight, it would seem, grows more and more difficult to achieve as the inner regions of the personality are approached. And yet some individuals accomplish remarkable feats of self-objectification. Why do they succeed and others fail?

3. *Memory.*—Thanks to Bartlett we know how cultural schemata alter our memory traces (**3**). Here, of course, is an example of the silent influence of an ethnocentric frame. But within any given culture striking memory-efforts can be traced to egocentric frames as well.

Edwards has demonstrated that if memory material fails to fit comfortably into an ego-involved frame, it contorts itself until it does so. Using three groups of students, each with a different attitude toward the New Deal (favorable, neutral, or opposed) he first read them a 10-minute passage concerning the relations of the New Deal to communism. The subjects knew they were to be tested for the accuracy of their retention.

> Immediately after the reading, a multiple choice recognition test consisting of 46 items was given to the subjects. Half or 23 of the items on the test were answered in the passage in a manner favorable to the New Deal, the other 23 were answered in a manner unfavorable. The items on the test offered opportunities for rationalization of one's answer, if the correct answer was opposed to one's attitude. The subjects were re-tested after an interval of 21 days.
>
> Analysis of variance of the data showed that rationalization was directly associated with the degree of conflict between the correct answer and the attitudinal frames of reference of our subjects. In general the results show—as do many other studies—that it is almost impossible to expect objectivity and accuracy in perception, learning, remembering, thinking, etc., when ego-involved frames of reference are stimulated (**9**, p. 234).

Here one might cite also the memory experiments of Zillig which show how members of the male sex recall fewer aphorisms favorable to women than to men (**58**). Or, the Watson and Hartmann study concerning the distortions that occur in memory for theological arguments depending upon the subject's previous commitment to atheism or to theism (**56**). Or, Wallen's ingenious demonstration that after an interval of time subjects recall ratings of their own personalities in a

manner that makes them compatible with their own preconceived opinions of themselves (54).

In a recent investigation Levine and Murphy demonstrated that pro-Communist sympathizers memorize pro-Communist textual material more easily than they do anti-Communist textual material (30). What is more, they forget the antipathetic text more rapidly and more completely than the sympathetic text. In anti-Communists the effects are exactly reversed. It was a brilliant stroke for these authors to demonstrate in one experiment that both learning and forgetting are functions of the political identifications of the ego.

4. *Frame of reference.*—Some of the studies I have mentioned have been conducted in relation to what their authors have called a 'frame of reference.' Now, a frame of reference seems to signify *any spatial-temporal or cultural orientation, that relates many of an individual's attitudes, habits and judgments to one another, and influences the formation of new judgments, attitudes, and habits.* A general orientation favorable to the New Deal will, according to Edwards, determine our specific remembrance of items from speeches concerning the New Deal (8). A general orientation regarding various other subjects, Sells has shown (47), will affect our logical reasoning in all matters pertaining to them.

Now it is important to note that not all frames are ego-involved. If I locate 9th Avenue or East 12th Street readily it is because I have a geographic frame in mind for New York City. In my case this spatial orientation is not at all ego-involved. The point I am making is that research on the problem of frames of reference is not necessarily research on the problem of ego-involvement. Many cultural frames having to do with language, etiquette, or dress, determine our perceptions, our memory, our conduct, but their influence is not felt as personally relevant. Margaret Mead has expressed her anthropological astonishment at the odd custom Americans have of appearing at her lectures with clothes on; but to most of us this quaint folkway causes no ego-concern, at least as long as it is operative.

But an interesting discovery has come to light in these days of war and violence. Certain cultural frames which were previously indifferent have suddenly become acutely personal. Probably no one in Alsace felt concerned about the bilingual frame of reference until the Nazis decreed that only German should be spoken, and that only Germanized names and inscriptions should appear on the tombstones. Bilinguality had always been taken for granted, but when this familiar, habitual frame was suppressed and placed under attack, then it became of central importance, and people reacted as to a personal insult. Many of us have recently discovered that hitherto indifferent frames of reference, such as the Constitutional guarantees we enjoy, previously taken for granted, have suddenly become ego-involved, and now in jeopardy are defended as if they were parts of our physical bodies. Suppose we in this room were forbidden to speak the English language. How enraged we would become. What had always been a mere ethnocentric frame would immediately become ego-involved.

Ethnocentric and egocentric frames both affect our conduct, and, as I have just pointed out, under certain conditions the ethnocentric frame is experienced also as an egocentric frame. But I think it is a mistake to confuse the concept of the ego with that of the socius (or cultural portion of our personalities) as Sherif has done. Under normal social conditions only a relatively small portion of our culture is ego-involved.

5. *Learning.*—The longest and most difficult chapter in psychology, no one will deny, is the chapter on learning. The latest Yearbook of the National Society for the Study of Education is devoted entirely to this subject (41). One searches its 463 pages in vain for any mention of the ego, and almost in vain for any recognition of the importance of *interest.* True, one finds occasional remarks to the effect that "the teacher who neglects the simple but powerful word of praise does so at her pedagogical peril" (41, p. 118), but the potential significance of such remarks for learning theory seems lost to view.

Clinical, educational, and industrial psychologists know that the first rule of all applied psychology is that every child and every adult needs some experience of success and social approval. John E. Anderson advises the teacher to go far out of her way if necessary to find an area in which these feelings can be engendered, and he adds

> Success in one area may more than compensate for failure in many areas; some accomplishment furnishes an integrating center about which the personality may be integrated (41, p. 349).

Note especially Anderson's statement that "success in one area may more than compensate for failure in many areas." Only in terms of ego-psychology can we account for such fluid compensation. Mental health and happiness, it seems, does not depend upon the satisfaction of *this* drive or *that* drive, it depends rather upon the *person* finding *some* area of success *somewhere*. The *ego* must be satisfied, not the hunger drive, nor the sex drive, nor the maternal drive, however temporarily insistent these segmental tensions may be.

Now most theories of learning lean heavily upon the assumption of multiple drives. A segmental tension exists, the organism behaves, the tension is relieved, and the response set. In this sequence it is often assumed that all drives are equally potent for learning. The satisfaction of any drive, through the principle of reward or confirming reaction, is held to bring about an equal degree of learning. If this is so, how can we account for the fact that praise is found almost uniformly to be the leading incentive in school, in factory, and in ordinary life? If we are to hold to the theory of multiple drives at all, we must at least admit that the ego-drive (or pride, or desire for approval—call it what we will) takes precedence over all other drives.

Not only does human learning proceed best when the incentive of praise and recognition is used, but the individual's *capacity* for learning actually seems to expand under this condition. Every psychometrist knows that in order to obtain a valid I.Q. the subject must be encouraged. Terman's instructions on this point are well known.

> Nothing contributes more to a satisfactory *rapport* than praise of the child's efforts. . . . In general, the poorer the response, the better satisfied one should appear to be with it. . . . Exclamations like fine! splendid! etc., should be used lavishly (52, p. 125).

In other words, to maximize the child's intelligence we must maximize his ego. For psychological theory this is really a momentous fact. Intelligence is the ego's tool for solving its own problems. It is manifestly unfair to estimate intelligence on the basis of performance in which the individual himself has no interest. For this reason, through the device of praise, the subject must be encouraged to make the test-items into ego-involved problems which he can attack with maximally motivated effort. Intelligence is the individual's capacity to solve problems of importance to himself.

There is one unfavorable condition for learning that must be admitted lest we oversimplify the issue. Too intense an ego-involvement may be disruptive. Its normal integrative value may be actually undetermined when eagerness or self-consciousness reach a degree of intensity that lead to embarrassment or over-anxiousness. No one learns or performs well if his autonomic nervous system is in a turmoil. We need a rule that will help us determine the optimum degree of ego-involvement required for enhancing efficiency of learning and performance.[5]

One word about the law of effect. Its principal shortcoming, I think, stems from the assumption that rewarded *responses* tend to recur. Many experiments, in fact, show that rewarded responses do not blindly recur whenever an appropriate stimulus returns. Hoppe (21) points out that people normally do not strive again for a goal successfully achieved. What they do is to raise their aspirations to a point where they clearly risk failure. A student who makes an A record in a course in college, shows no tendency to repeat that course. He prefers to take new risks in the same

[5] One formulation of the needed rule is suggested by French: "So long as the tension does not exceed the available energy of the integrative mechanisms, so long will the integrative capacity of the goal-directed striving increase with increasing tension. But as soon as the tension of the need begins to exceed the available energy of the integrating mechanism, the effect of increasing tension will be the opposite" (15, p. 245).

general area. And an experiment by Rosenzweig indicates that it is definitely infantile to choose to repeat successful acts (**46**). For example, a puzzle once solved, even if accompanied by a burst of elation, no longer attracts the mature individual. He wants new worlds to conquer. Reward may bring merely satiation and boredom.

The fallacy, I repeat, lies in our speaking of rewarding a *response*. The law of effect would be truer if it held simply that a *person*, being rewarded, employs his past successes in whatever way he thinks is likely to bring him satisfaction in the *future*. Israeli has shown that, excepting for certain psychopaths, people are much more interested in their futures than in their pasts (**24**). Since this is so, an individual's past performances often mean little or nothing to him. Only if the ego would be served thereby, does he engage in a repetition of the successful act. More often he chooses to vary and refine his behavior so that he may feel that he himself is growing toward new successes in the future.

The relation between success and repetition, I suspect, is much closer in the case of non ego-involved behavior than in the case of ego-involved behavior. Over and over again I use the same motor combinations in typewriting, in driving my car, in dealing with tradesmen. They are reasonably successful acts; why should I change them? But I do not repeat successful research work, do not repeat a gratifying conversation with a friend, nor do I re-state the same goal in an aspiration-level experiment. Ego-involved tasks often demand changing goals and new responses. Rewarded behavior, it would seem, becomes stereotyped only in lower animals, or in such human activities of a routine nature that fail to engage the ego.

To summarize this brief discussion, it would seem that in order to employ the law of effect with human learning we must view it as secondary to the principle of ego-involvement. The law of effect, like cue reduction, conditioning, bond-formation, and most other popular principles of learning, have been worked out for the most part on animal subjects or on human beings deprived for the duration of the experiment, of their

egos. The principles may be good ones, but I submit that when the ego is engaged they operate in a contingent fashion. Learning theory of the future, let us hope, will not remain so peripheral to the ego.

6. *Motivation.*—You may be thinking, "But, we've always known that one must be motivated in order to secure a response. Are you talking about anything more than the importance of motivation?" Yes. I am saying that there are two forms of motivation, one ego-involved and one not, and I am attempting by repeated citations from experiments to show the differences that exist between them.

Take, for example, the work of Huntley and Wolff on judgments based upon records of expressive behavior (**23, 57**). These investigators working independently instructed their subjects to make judgments concerning the personalities of many people from their handwritings, from their recorded voices, from photographs of hands, and from their style of story telling. The subjects were motivated in a routine manner as is any laboratory subject. But, suddenly, in the midst of the series they were confronted with samples of their own expressive behavior which had been recorded without their knowledge. In the large majority of cases the subjects did not consciously recognize their own records and continued innocently with their characterizations. But something had happened. The characterizations began to take a different form. Even though a judge was wholly unaware that a certain expression was his own, he gave it a much more favorable rating than he gave similar expressive records taken from other subjects. Occasionally he gave it a vehemently unfavorable rating, but practically never did he give it an indifferent rating. Other people's records might arouse no affect, but not his. Whenever a subject became half-conscious, as it were, that a record might possibly be his, his judgments were still more intensely partisan; but when he fully recognized his own record then his social sense of modesty prevailed, and his judgments returned to the noncommital level.

In these experiments we have a particularly neat demon-

stration of the fact that ego-involved systems may operate in a wholly silent manner, affecting judgments in a most extreme way without the subject knowing the reason. The experiments also prove that the limen of ego-involvement is lower than the limen for self-recognition, an interesting finding which warns us once more that conscious report and introspection will never be a sufficient method for exploring the operations of the ego-system. But the important point for our present purposes, is to note that routine motivation to perform a task is one thing, and that ego-charged motivation is quite another. Routine motives yield one set of results, ego-motives a different set.

When is motivation ego-involved and when is it not? A partial answer seems to lie in the degree of frustration involved. As we have already noted many customary frames of reference are not felt to be personally relevant, and do not behave like egocentric frames, until their continuance is threatened (as in wartime). Many drives, too, run their course without engaging the ego unless they are interfered with. But serious frustration may instigate the clamor, the jealousy, the possessiveness, often characteristic of ego-involvement. And yet frustration by no means always produces this effect, especially if one has compensated for drive-frustration by success in other realms. And then, to complicate the situation further, we cannot say that ego-involvement is absent when there is no frustration. Many smooth-running instances of goal-seeking behavior are obviously ego-involved. A mother feels just as closely identified with her child when it is in good health as when her maternal care meets with frustration. A business man is as much absorbed in his enterprise in times of prosperity as he is in times of adversity. Let us say, then, that frustration of goal-seeking behavior or any kind of threat to the individual, is very likely to engage the ego-system; but that normally this ego-system is made up of the ordinary values which spell out the significance of life to the individual.

7. *The level of aspiration.*—The history of ten years' research on this Lewinian problem is too intricate to trace

here, but unless I am mistaken every investigation has directly or indirectly confirmed Hoppe's initial claim that the subject behaves in such a manner as to maintain his self-esteem at the highest possible level (21). Of course, many investigators have not used the conception of the ego at all. Yet whatever results are found they all seem to point to the essential inescapability of Hoppe's original hypothesis. Frank (11) for example, found that subjects in whom 'self competition, and consciousness of social pressure' were present, had D-scores three to seven times as large as did subjects who had no such sense of personal involvement in the situation.[6] Frank also found that subjects who are ego-involved do not change their estimates with every little variation in their performance. They try and try again before trimming their aspirations to fit their capacities; subjects not ego-involved on the other hand, quickly yield to the immediate realities of the situation, and lower their aspiration level (12). We know too that competitiveness, surely a symptom of ego-involvement, usually produces a rise and greater consistency in the aspiration level (43). But we cannot say that competitiveness always has this effect because subjects who dread competition will lower their level of aspiration consistently in order to avoid the risk of humiliation (11). In short, it seems always to be the ego-demand of the individual subject that determines the behavior of the aspiration level. Some subjects are adventurous, some cautious; their egos demand different types of satisfaction, and it is this fact that is repeatedly reflected in the results of the experiments. It is worth pointing out that historically the aspiration level may well be regarded as the door by which the ego re-entered the cloisters of academic psychology.

8. *Industrial psychology.*—Most of us, I suppose, have been impressed in recent years by the demonstrations of Roethlisberger and Dickson (44), of Watson (55), and others, that employees in industry are not 'economic men' so much as they are 'ego men.' What they want, above all else, is

[6] D-scores, of course, indicate the discrepancy between performance and the goal that the individual wishes or expects to achieve.

credit for work done, interesting tasks, appreciation, approval, congenial relations with their employers and fellow workers. These satisfactions they want even more than high wages or job security. Now, the employer's estimate of the worker's wants correlates just about zero with the worker's own report of his wants (**55**, p. 119). The employer thinks that wages and security are the dominant desires, whereas in reality the ego-satisfactions are primary. What a different outlook there would be on our economic life if we took firm hold on the issues of status and self-respect in industry, and re-planned our industrial society in a manner that would rescue the worker's ego from oblivion.

IV. The Nature of the Ego

In the experiments I have cited, and in many others of analogous nature, it turns out that one group of subjects (those who are personally aroused and committed to a task) behave in ways quite unlike other subjects (who are not so committed). In some instances there are measurable quantitative differences as great as 50 or 60 per cent, sometimes much more. In other instances there are qualitative changes that elude measurement. In short, we are here confronted with some parameter that makes a vast difference in our experimental results.

We have seen that under conditions of ego-involvement the whole personality manifests greater consistency in behavior, reveals not specificity in conduct but generality and congruence. In the field of judgment, we have seen how ego-involvement results in significant distortions of the ordinary psychophysical scales. In memory, we find that retention is characteristically superior (though at times repressions also may be more likely to occur, and rationalizations may creep into ego-involved memory). In intelligence, we note that ego-involvement is indispensable if we would obtain optimum performance. In learning theory, reforms seem indicated to make room for the demonstrable influence of the ego upon the acquisition of skill and knowledge. In motivation, the craving for recognition, status, and personal ap-

preciation turns out to be supreme, so much so that our conceptions of procedure and policy in industrial relations, in education, and in psychotherapy, are profoundly affected. And these are only a few of the operational criteria by which we may demonstrate the existence of the ego.

Its admittance to good standing in contemporary psychology has been advocated by several psychologists besides myself. Koffka, Lewin, and the psychoanalysts have done so; as has Murray who makes a distinction between 'peripheralist' psychology and 'centralist' psychology (40). The thesis set forth in Roger's recent book *Counseling and psychotherapy* (45) seems to me especially clear evidence that the ego is coming into its own. Rogers, in effect, asks counselors to sit back and with little more than an occasionally well-placed *m-hm*, to encourage the patient himself to restructure and re-plan his life. The patient's ego takes command. It's about time it should.

Although we have given an adequate operational demonstration of the ego, we have not yet faced the difficult problem of definition. Earlier we saw that eight conceptions seem to prevail. But whenever we encounter ego-involvement the ego in several of its historical senses seems to be active. Furthermore, these historical conceptions seem to have much in common.

For one thing, it seems clear that all of the conceptions are less embracing than 'personality.' All writers seem agreed that the ego is only one portion, one region, or as the Freudians say, one 'institution,' of the personality. Many skills, habits, memories are components of personality but seldom, if ever, become ego-involved. Writers seem also agreed that the ego is non-existent in early childhood, evolving gradually as the child comes to mark himself off from his environment and from other human beings. They seem also to agree in viewing the ego as the portion of the personality that is in proximate relation to the external world. It senses the threats, the opportunities, and the survival significance of both outer and inner events. It is that portion of the personality, so to speak, that meets the world head-on. It is

the contact-region of the personality. For that reason it is also the conflict-region. Yet it is coextensive with neither consciousness nor with unconsciousness, for much that we are conscious of is indifferent to our egos, and many unconscious stimuli silently but effectively engage them.

There is also agreement that the subjective sense of the ego varies greatly from time to time, now contracting to include less than the body, now expanding to include more. Its content keeps changing, for at certain moments the ego seems preoccupied with one activity and soon thereafter with a wholly different activity. This shifting scene however does not mean that there is no stable and recurring structure. On the contrary, if you know a person well enough, you find that you are able to predict with marked success what items will and what items will not be linked to his ego. By many writers the ego is represented as a layered structure. Certainly there are *degrees* of ego-involvement. A person may be intensely partisan or moderately partisan.

There seems to be one other property of the ego, less often discussed, namely its customary preoccupation with the future. Israeli, it will be remembered, reports that among his subjects over ninety per cent expressed themselves more interested in their futures than in their pasts (**24**). This finding is worth stressing, for as a rule, psychologists are more interested in a person's past than in his future. In other words, the psychologist and his subject customarily face in different directions, and that is unfortunate.

V. Psychology During the War and After

You and I are ego-involved in the course of the war and in the outcome of the future peace. Likewise, for different reasons, we are involved in the development and progress of psychology as a science and as a profession. Now it is typical of the generalizing tendency in the ego that matters having a high degree of personal relevance do not ordinarily remain apart. They tend to become fused into an integrated plan of action. Thus, in order to help win the war approximately a thousand psychologists have transferred their pro-

fessional activity to camps, factories, or government offices. And most of those who have remained in colleges have rearranged their lives in such a way as to blend their war interests with their professional activity.

Although it is too early to evaluate the work we all are doing, I wonder if you have the same impression I have concerning the utility of our previous training in psychology. It is my guess that insofar as our war work deals with sensory, perceptual, and psychometric problems, the transfer value of our previous psychological training is very high. But insofar as our war work deals with problems of morale, public opinion, national character, scapegoating, ideology, guidance, rehabilitation—any of the areas where the major hates, fears, and hopes of men are concerned—the transfer value of our previous training is much less. In other words, the psychology that treats the non-ego involved functions of the human organism has developed to a point of immediate utility, whereas the psychology of the 'central' regions of personality has not. I make this statement with full appreciation of the admirable work of our colleagues in OSS, in OWI, FBIS, and in other similar bureaus. But most of them, I think, would agree that the psychology available for application to their problems has shown itself to be both meagre and inept.

It might be argued that, being a young science, psychology has moved, as it were, from the surface inward. Given time we shall have as much to contribute to an understanding of the central layers as of the surface. But is it merely a matter of time? Is it not rather that the sumptuary regulations of our science have been unhealthy for the ego?

Everywhere we encounter the paradox: As a group, psychologists are liberal, internationally minded, and devoted to the welfare of the common man. They believe in providing a soil where the infinite varieties of the human ego may freely grow. At the same time their assumptions, their methods, their theories have not been well suited to the attainment of their objectives.

For the past ten years we have become increasingly aware of this paradox. As evidence, there is the mounting tide of

experiments of the type I have reviewed. As further evidence, there is the widespread recasting of our activities in wartime and the notable turning of psychologists' interests to the formulation of conditions for a lasting peace (51). In all this work there is a somewhat novel co-operative spirit. The coming Inter-Society Constitutional Convention is one instance of what I have in mind. As never before we seem to desire to have our productions fit together. Ego-satisfactions, we are discovering, are not necessarily competitive. One is reminded here of the experiments of Helen Lewis (unpublished) which have demonstrated that *your* tensions may be resolved by *my* work and *my* tensions may be resolved by *your* work, provided only that we regard ourselves as co-operating members in a common undertaking.

The admittance of the ego to good standing in psychology does not mean a re-importation of the *deus ex machina* of pre-Wundtian psychology. It does mean, however, a recognition of the fact that our predecessors who regarded psychology as the science of the soul, were not wrong in setting the problems of unity and personal relevance before us. What they called the soul, we may now, with good conscience, call the ego. In so doing, no clocks need to be set backward. Dialectics has already given way to experiment and to the clinic, and to still newer methods for studying the common man in his normal social setting.

But disregarding the problems of method, which are beyond the scope of my paper, we may safely predict that ego-psychology in the twentieth century will flourish increasingly. For only with its aid can psychologists reconcile the human nature that they study and the human nature that they serve.

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THE ELEMENTARY UNITS OF BEHAVIOR

BY HOMER H. DUBS

Duke University[1]

The discovery of the fundamental units in any science and their clear definition have always been important tasks. In biology, the discovery of the cell has been invaluable. In physics, the definition of its units in terms of the centimeter, gram, and second, which three fundamental units have also been exactly specified, has produced a great clarification. In psychology today, terms like drive, desire, reflex, goal, motivation, etc. are often used with only rough indications of their precise meaning. In the seventeenth century, the term 'force' was similarly used with the various meanings now allotted to the terms, force, inertia, momentum, energy, work, etc. Descartes thought he knew what he meant by 'force,' but even he was confused. Unless a term is actually defined clearly, neither the author nor the reader can be sure that he is thinking exactly.[2]

Psychology, as the science of behavior, is interested primarily in the *functioning* of organisms. Structure, whether neurological or introspective, is interesting to psychology only insofar as it contributes to an understanding of functioning. The fundamental units of psychology will then have

[1] The writer is indebted to Professor K. E. Zener for reading this paper and for many stimulating suggestions and criticisms.

[2] A correct definition should state clearly what is included and what is excluded from the concept defined; border-line cases test a good definition. When Professor C. L. Hull defines a 'drive' as "a stimulus physiologically connected with a need or a stimulus which previously in the history of the organism has accompanied the diminution or cessation of a need" ('Basic behavioral concepts and postulates,' mimeographed mss., 1942, definition 13), his definition should be tested by such a cessation of needs as that produced by sleep or chloroform. Does he really wish to include sleep and chloroform-narcosis among the entities that are drives for all the sorts of needed activity diminished or stopped at such times (hunger, exercise, friendly conversation, etc.)?

the nature of functions.[3] Our problem may hence be stated thus: What are the fundamental types of psychological organizations that produce the behavior of organisms?

This paper presents the hypothesis that, in spite of the great complexity of behavior, there are only *two* fundamental types of psychological units, which occur in both inherited and in learned examples. All forms of behavior may then be defined and explained in terms of these two fundamental types of functions. To avoid mistaken connotations that have gathered about commonly used words, I suggest for these two types of functions the names mechanism and interest. In defining these elementary psychological units, I shall first indicate by examples what sort of entities are under consideration and then state their fundamental characteristics.

1. The behaviorists have made an important contribution to psychology by calling attention to the type of function exemplified in the reflex. This word is usefully restricted to inherited functions similar to the lid reflex, patellar reflex, etc. There are, however, other learned functions quite analogous to inherited reflexes, in that they produce certain definite reactions upon the occurrence of certain stimuli. Habit-chains, like dressing, walking, typewriting, the recitation of a memorized poem (considered apart from their motivating factors), are analogous to reflexes, but are learned and are usually more complicated than reflexes. These learned functions (when considered by themselves) are automatic and exhibit a minimum of adaptation to varying situations. Since there seems to be no

[3] By a *function* I mean the permanent or semi-permanent neural or mental or other connection made between a type of stimulus and an organism's internal or external, conscious or unconscious response. That is to say, the totality of connections intervening between a cause acting upon an organism and the effect produced in that organism or by it in the external world may be called the function. A function is then the intra-organic structure responsible for observed behavior. I have used the word 'function' because the nature of these structural organizations will be specified, not in terms of any hypothetical neural or thought structures, but in terms of the observable effects produced.

In order to exclude purely physiological functions, we may limit the term *psychological functions* to those that require at least some functioning of the central nervous system. Any functioning of the skeletal muscles or any conscious experience seems to involve, at least in part, the central nervous system.

single term in use today which includes both these learned automatic functions and the reflexes, I propose to call both of them *psychological mechanisms* or *mechanical functions*.[4]

Psychological mechanisms, even the simplest ones, such as inherited reflexes, are far from being merely one-way connections. A mechanical psychological function always includes at least *three* features: (*a*) an organization of receptors for receiving and distinguishing a certain stimulus or an experience belonging to a group of stimuli, the occurrence of which sets this mechanism into operation. Psychological mechanisms are 'propelled from within'; their stimuli are merely the occasions that set them off, as a match touches off a fuse. For some mechanisms, its adequate stimulus is any one among a group of similar events—its stimulus is logically a universal. The lid-reflex, for example, may be set off, not only by only one particular object, but by any one of the extremely large class of objects that may appear to be about to enter the normal eye. The adequate stimulus for a mechanism is usually any one of a type of events, the nature of which type depends upon the particular function considered.

(*b*) A psychological mechanism also includes the structures needed for producing a specific reaction or set of reactions. This reaction is always the same for the same function, so that a mechanism may be specified in terms of its effect. While the adequate stimulus for a mechanism may be any one of a group of possible events, its reaction is only a singular particular event. Indeed, if different reactions occurred from what is supposedly the same function, how could it be the same one? Each repeatable elementary unit of behavior indicates a separate mechanism. Walking, for example, is then not a single mechanical function, but a galaxy of functions, since human beings rarely walk along the same pathway with exactly the same movements. The performance of walking includes the operation of mechanisms for turning motions of various sorts, for stepping upwards, downwards, etc. The

[4] In using the term 'mechanism,' I do not mean to imply that other psychological functions, particularly interests, are not also mechanical (*cf. infra*, note 17). The word 'mechanism' is used merely in default of a better one.

functions producing a walk from one particular locality to another may indeed become, by long repetition, a single organized mechanical function made out of previously unrelated functions. But ordinary walking, in the course of which we turn corners, step up and down, whether consciously or not, involves the continual selection among various distinct walking mechanisms. Mechanisms are distinguished from each other by distinct reactions.

(*c*) In addition to these two features, even the simplest and most rudimentary mechanical functions (simple reflexes) possess a third characteristic: an inner capacity for facilitation or inhibition of the function. The general conditions of the organism, as well as particular states of tension or relaxation, influence the rapidity and vigor of even the simplest reflexes (*e.g.*, the patellar reflex). Hence a psychological mechanism is far from being merely a single continuous linkage of neurons. The usual diagram for it:

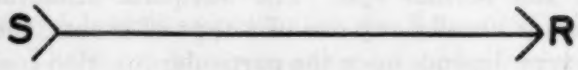

FIG. 1.

omits a feature found in even the simplest example—its central facilitation or retardation. A psychological mechanism should be diagrammed as

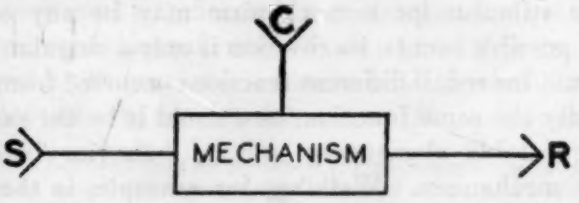

FIG. 2.

to indicate that it is always to some extent under central control.

Acquired mechanisms are controlled centrally to a much greater extent than inherited ones. Reflexes are normally furnished by the organism with energy, the supply of which is mostly independent of other functions. Learned mechanisms (habit-chains, etc.) however nearly always derive their

entire supply of energy from other psychological functions. Hence an adequate stimulus, which, under normal circumstances, would set a mechanical function into operation, may yet at other times produce no effect, because no energy is available to this mechanism. For example, when a tennis ball approaches a practised player at a given angle, it usually activates his mechanism for returning that ball. If, however, he recognizes the ball to be legally dead, the same ball coming at the same angle may produce no reaction. The supply of energy to the mechanism for returning the ball has been cut off by that perception, so that the mechanism does not function. The operation of psychological mechanisms depends not merely upon external stimuli, but also whether psychological energy is available for the performance of that function.[5]

Almost all human and animal behavior, at least all repeatable behavior, is due to the action of psychological mechanisms (disregarding the larger organization and direction of behavior and limiting our consideration to individual repeated groups of motions). In learning to play a game, such as tennis, that learning consists largely in the formation of habitual mechanisms, such as those required for serving the ball, for a forehand return, for a backhand return, etc., and for making these movements at various heights of the ball, various angles of return, etc. Even such behavior as visual perception (considered as already learned activity and apart from the organization of Gestalten, etc.) may be considered as groups of mechanisms, whose stimuli are light-rays impinging upon the retina and whose reactions are conscious perceptions. The number of mechanisms in the adult human organism is quite large. It is known that the number of reflexes (inherited mechanisms) is large. Since learned behavior is so much richer in its expression than are the reflexes, there are of course a much larger number of

[5] By *psychological energy* I do not mean the physical energy stored in muscle fibers nor the neural energy required in the transmission of an impulse along a normal motor neuron, but rather the something *additionally* necessary to enable normal and well-nourished neurons and muscles to function—the something supplied to the neuron organizations of an unfatigued tennis-player when he attempts to return a ball and withheld from those organizations when he does not make such an attempt. I am describing in functional, not structural or physiological terms.

acquired mechanisms than even of reflexes. Psychological mechanisms are ubiquitous in behavior and constitute perhaps the most numerous of elementary psychological functions.

In dealing with these functions, psychology should be able to specify for each one, what is (*a*) its adequate stimulus, (*b*) its specific reaction, and (*c*) what other circumstances commonly facilitate or inhibit it. The psychologist may leave the consideration of neural pathways to the neurologist, since such knowledge is useful to psychology only insofar as it illumines observable behavior. Neural pathways are usually vague and largely speculative, while the functioning of neural apparatus may nearly always be described without a knowledge of its neurology.

2. The psychological mechanism is plainly a fundamental unit of behavior. This type of function produces such an overwhelming proportion of actual behavior that it is not surprising to find behaviorism at first confining itself to a consideration of reflexes and analogous mechanisms. As, however, a deeper study of behavior has been made, the inadequacy of mere mechanisms has become constantly more evident. Features such as adaptation, learning, and even conditioning have been found to require, in addition to mechanisms, something else, especially the operation of goals, which latter feature is absent in psychological mechanisms. Even such a resolute behaviorist as Hull has been led to include 'drives' in his postulate systems. Various terms have been used for these other types of functions: Tolman and Stone have talked of 'appetites' and 'drives,' Lewin and Köhler of 'vectors' and 'echte Bedürfnisse,' McDougall of 'propensities,' Allport of 'drives' and 'prepotent reflexes,' Murray of 'drives,' 'needs,' 'propensities,' 'press-needs,' Dunlap of 'desires,' and others of 'excitatory tendencies,' 'motivating forces,' 'libido,' 'psychological forces,' etc. Especially prominent has been 'the directional character of behavior,'[6] which conception is perhaps most conveniently summed up in the term 'drive.'

[6] H. A Murray, *Explorations in personality*, p. 58. *Cf.* Tolman's remark, "Behavior always seems to have the character of getting to or getting from a specific goal object or goal situation" (*Purposive behavior*, p. 10).

A useful definition of 'drive' or directional behavior is that it is "a persistent goal-oriented behavior, which typically disappears when the animal makes the consummatory goal response." [7] McDougall was very insistent about the directional feature of propensities; Lewin includes the same notion in his concept of 'vectors.'

While there are undoubtedly many cases of actual directional behavior, I believe the common assumption is incorrect which holds that the 'drive' or any similar psychological function that includes literally directional behavior is an elementary unit. In place of the 'drive' or 'directed action,' it is possible to substitute, as a fundamental unit of behavior, the concept of a psychological function which *includes a goal* but *no directed behavior*. A 'drive' would then be compounded of this new type of function along with one or more psychological mechanisms. Each of these component functions may hence operate separately from any one of the others. Our problem is accordingly: Is behavior that involves a goal always oriented in some specific direction?

Hunger is commonly taken as a 'drive.' Yet there seems to be little limitation to the varieties of behavior (due to psychological mechanisms) which may be produced by the action of hunger. It may, seemingly, actuate, at different times, practically every one of the body's mechanisms. Which one of these mechanical functions is to be understood as 'really' belonging specifically to the 'hunger-drive'? At times, hunger may moreover produce quite undirected action. Almost everyone has at some time found himself acting aimlessly, restlessly, perhaps aware of a stomach-ache. One may even become apprehensive of stomach-trouble. Such a person often discovers, upon reflection, that he is really hungry and verifies that hypothesis by finding that food stops his restless undirected movements. In such a situation, until it occurs to the person that he is hungry, he makes *no directed behavior*. His hunger activates any mechanism that by chance is available, so that a succession of unrelated

[7] P. T. Young, The empirical analysis of appetite, *Psychol. Bull.*, 1940, 38, 137, note 7.

mechanisms are stimulated, which procedure is called 'restlessness.' A single case of this sort is adequate to establish that the operation of a goal does not necessarily involve any drive or directed behavior, and that goals are quite consistent with aimless, undirected behavior. We must then eliminate the concept of directional behavior from our list of elementary psychological functions.

There are other cases of undirected behavior motivated by goals. The father who is waiting for his child to be born is strongly motivated, but what direction does his behavior exhibit? Mere walking up and down is hardly 'directional' or a 'drive' towards any point, spatial or otherwise. Since any adequate directed response to the situation is impossible, his intense psychological energy escapes into haphazard, undirected behavior, which is useless, hence quickly altered. Sidis and Goodheart report an amnesic patient who did not recognize his hunger when it occurred, and did not even know how to masticate or swallow.[8] Aveling reports that "the will-act itself is not conative (in the sense of a striving), whereas the carrying-out of the decision most frequently is." [9] It is then plain that while drives (*i.e.*, directed action) do occur, yet there are cases in which goals have been set up (consciously or unconsciously) and in which they function, yet no directed activity occurs. We must divorce the concept of a goal from that of directed activity, and conclude that a drive is a compound function, not an elementary one.

The concept of a psychological function which includes the notion of a goal but not that of directional behavior does not seem to have been employed in psychological theory. As the name for this type of function, I suggest the term *interest*. When this type of psychological function is studied carefully, it moreover is found always to have four characteristic features, by the occurrence of which an interest may be identified and defined. These four are: (*a*) a stimulus, (*b*) the capacity for releasing psychological energy, (*c*) a goal, and (*d*) the

[8] B. Sidis & S. P. Goodheart, *Multiple personality:* Part II, The Hanna Case. 1904.

[9] F. Aveling in *Feelings and emotion*, p. 53.

capacity for producing satisfaction- or dissatisfaction-feeling. We shall discuss them in order.

(*a*) Like a psychological mechanism, each interest includes an organization of receptors for distinguishing a certain stimulus, the occurrence of which stimulus usually sets the interest to operating. The adequate stimulus to an interest, like that of a mechanism, may be any one of a large group of occurrences which have in common only some conceptual similarity. Fear, for example, may be aroused by any one of the almost infinite number of possible events which happens to be perceived as threateningly ominous.[10]

(*b*) In the second place, an interest has the capacity to release psychological energy, which may or may not be directed into definite useful channels. The particular mechanisms which channelize the energy, such as those for fidgeting, are indeed sometimes selected quite at random, so that their functioning may not actually conduce towards attaining the goal. The amount of energy available may differ under different circumstances, which difference may be called the *intensity* of the interest. The psychological energy for the functioning of acquired mechanisms is always derived entirely from the interest or interests that are operating. Except for inherited reflexes, mechanisms rarely if ever possess any inherent supply of energy, but operate only with the energy supplied by interests. Behavior is nearly always effected by mechanisms. But the energy required for the operation of acquired mechanisms is supplied by interests, and interests select the particular mechanisms that are allowed to operate. Acquired mechanisms operate only in the service of interests.[11]

[10] Fear occurs among animals as well as human beings, hence the statement that a stimulus may be a logical universal should not be understood always to imply abstract or even conscious thought. A master-key that fits any one of a number of locks is logically a universal, and its fitting and opening those locks is precisely parallel to the circumstance that any one of a group of events excites an interest. The arousing of fear no more inevitably involves conscious or abstract thought than does the turning of a key in a lock.

[11] This fact is confirmed by O. W. Mowrer's first conclusion (in his 'Preparatory Set,' PSYCHOL. REV., 1938, 45, 88), if we understand his 'conditioned responses' to be 'mechanisms' and his 'state of expectancy or preparatory set' to be 'aroused interests.' Studies of conditioning (*i.e.*, acquired mechanisms), without considering the interests operating, miss more than half of the factors involved.

The operation of a mechanism is accordingly conditioned upon at least two factors: (1) the interest or interests that have been aroused and (2) the particular stimulus for that particular mechanism. An interest makes energy available to a set of mechanisms. Which particular mechanism is activated depends in addition upon the incident stimuli. For example, in walking to a definite point, the interest in reaching that place makes energy available to the various walking, turning, climbing, etc. mechanisms. The interest also cuts off the energy when the goal (that place) has been attained. Whether the person steps up or down, walks on a level, turns, etc., depends upon the visual stimuli that arrive. This situation is diagrammed in Figure 3. Thus stimuli select

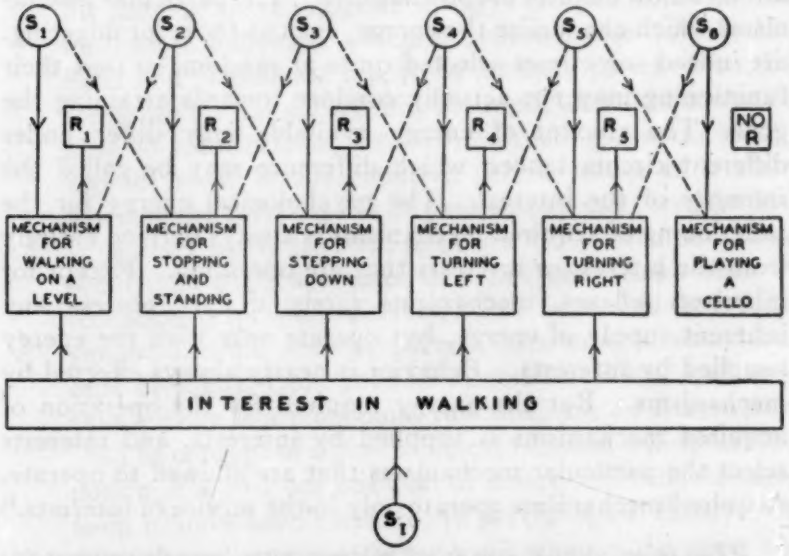

FIG. 3. Diagram of an interest with mechanisms. Dotted lines indicate the impinging of inadequate stimuli. Note that S_6, though an adequate stimulus, produces no reaction, because the interest does not activate this mechanism.

among interests, interests select among mechanisms, and additional stimuli select among mechanisms.

The foregoing analysis by no means exhausts the possibility of complications. Many acquired interests possess no original energy of their own, but derive that energy from more

firmly established interests. The reader may have had no original interest in reading this paper, but may have acquired his interest from his curiosity-interest. This larger interest supplies energy to the subordinate interest. Thus interests select among interests. The stronger interests often create subordinate interests with goals of their own. A strong ambition (an interest in becoming superior to others) may create an interest in playing tennis successfully; that interest may create an interest in winning a particular tennis tournament, which in turn may create another interest in winning a particular tennis match, etc. The proliferation of interests through setting up more specific goals may produce a quite complicated hierarchy of interests. Conflicts among the stronger, inherited interests may also lead to setting up a larger goal (and interest). Such a larger interest is frequently able to subordinate these conflicting interests to itself, to take for itself the energy of the conflicting interests (since their goals become merged in its goal), and thus to integrate and harmonize them. In a well-organized personality, a supremely dominant interest has been acquired, to which all the other interests of the personality have been subordinated, and by which supreme interest all interests are integrated. The *personality* itself may be defined as the set of dominant and subordinate interests and associated mechanisms that activate a particular organism. A study of interests thus makes possible a clear and exact analysis of personality.

(*c*) The third and perhaps most characteristic feature of an interest is its goal. Interests may be distinguished in terms of their goals. We may define a *goal* as any condition of the organism upon the occurrence of which the supply of energy furnished by an interest is cut off (unless the interest is again stimulated).[12] Any object, the securing of which is necessary to attain the condition that constitutes the goal, may be called a *goal-object.* Hunger, for example, is an interest whose goal consists in a certain degree of fullness of the

[12] Negative motivation, *e.g.*, that resulting in movement away from a source of pain, may be conceived as produced by a positive interest in the *avoidance* of pain. Such avoidance goals are quite common. Quiescence itself is rarely a goal, since the attainment of one goal is commonly followed by the stimulation of a different interest.

stomach and whose goal-object is food. In consciously directed activity, attention is usually placed upon the goal-object rather than the goal. In hunger, for example, we think about the beefsteak, not the unfilled stomach. Until trouble is caused by this substitution of a means for the end, the goal may not even be considered, although activity actually proceeds to the goal. Mechanisms that secure and ingest food are characteristically activated by the hunger-interest; the activity of these mechanisms accordingly ceases when the stomach is filled (unless other interests interfere).

Each different goal belongs to a separate interest, just as each separate activity results from a different mechanism. But human beings often continue to eat after their hunger has been satisfied. Hence, in addition to hunger, there must be other interests that utilize the mechanisms for eating. One of these interests is general appetite, the goal of which is the attainment of pleasant sensations from food.[13] Obesity is the result of over-intense appetite, not of hunger. (It is rarely a goal, but is a common effect.) In addition there may simultaneously operate other interests whose goals are (*a*) sweetness, (*b*) the eating of apple-pie, (*c*) of ice-cream, and even (*d*) of apple-pie à la mode. The ingestion of the last goal-object (apple-pie à la mode) may accordingly satisfy all of these six interests (the four enumerated above, plus hunger and general appetite). Since any of them may operate apart from any particular one of the others,[14] they are separate and distinct functions. The number of interests that may be satisfied simultaneously is often extremely large, and the task of listing the interests that commonly operate in human beings is of considerable magnitude. Even what is commonly called 'hunger' is not a single interest, but a moderately large

[13] The functioning of general appetite may be distinguished from that of hunger by the circumstance that, after hunger has been satisfied, if appetite is functioning, the organism will refuse plain food but consume good-tasting food. This distinction follows from the difference in the goals of these two interests. General appetite and appetities for particular tastes are usually 'likes' rather than 'full-fledged interests.' *Cf. infra.*

[14] The interest in apple-pie may operate from appetite as well as from hunger; the interest in pie à la mode may function apart from the interest in pie, when ice-cream is desired and unavailable except in combination with pie.

constellation of interests, for many goals are included under the name 'hunger.'

(*d*) In the fourth place, every interest includes a means for producing a non-localized pleasant sensation (which may be called a *satisfaction-feeling*) when the goal is attained (which attainment constitutes the *satisfaction* of the interest) and the capacity for producing an unpleasant *dissatisfaction-feeling* when the attainment of the goal is (consciously or unconsciously) found (*i.e.*, admitted) to be impossible (which latter situation may be summed up in the statement that the interest is *frustrated*). Satisfaction-feelings (which are subjective sensations) should be distinguished from the objective condition of attaining a goal, which latter may be called a satisfaction. It can be shown, I believe, that what have variously been called 'feeling,' 'feeling-tone,' 'agreeable and disagreeable feelings,' 'hedonic tone,' 'affection,' 'elementary feeling,' etc. is an experience that results only from the operation of interests. The experience of pleasantness or unpleasantness should then call attention to the fact that some interest or interests have been operating—'feeling-tone' is an indication of interests.[15]

Interests are so important in animal and human life—they are the directing factors in all life—that it is biologically advantageous for there to be a sensation ('feeling-tone' or pleasantness and/or unpleasantness), which indicates to the organism that an interest has been satisfied or frustrated. Critics (and defenders) of the 'law of effect' have not always realized that a 'satisfying state of affairs' (*i.e.*, a satisfaction or satisfaction-feeling) does not occur except in connection with some interest. It is just as important to consider the interests (and goals) involved as to consider objective events. A careful study of the interests motivating the subject of an

[15] This theory concerning the genesis of 'feeling-tone' accounts for the disappearance of pleasantness or unpleasantness when attended to. The attempt to attend to these 'feelings' substitutes an interest, namely the desire to attend to them, different from the interests whose satisfaction and/or dissatisfaction produced these feelings. Since the satisfied and/or dissatisfied interests are displaced and cease to operate, the satisfaction- and/or dissatisfaction-feelings caused by these interests also cease. In this manner, the attempt to attend directly to those 'feelings' brings about their disappearance.

experiment (sometimes called his 'attitudes') may lead to a radical revision in our understanding of this 'law.'

What is ordinarily called 'pleasure' (such as the pleasure of apple-pie à la mode) is often a blend of satisfaction-feelings from many interests. The 'goodness' (*i.e.*, feeling-tone) of pie à la mode is usually felt as a unit ("Ah! That pie was good!"), so that the satisfaction-feelings from distinct interests usually blend together, in much the way that the three or four elementary visual colors blend to form the shades of perception. The number of interests satisfied or frustrated is then responsible for the *intensity* of 'pleasant' or 'unpleasant' feelings.

Satisfaction- and/or dissatisfaction-feelings are produced, not only by the actual attainment of goals or by actual frustrations, but also by imagined attainments or frustrations, provided this imagination is vivid enough. Day- (and night-) dreaming derives its pleasure in this manner. Anticipatory imagination is able to omit many of the complex features of actual experience, especially the frustrations of certain interests that accompany the satisfactions of others (as when one imagines the satisfactions of eating a pie and omits the consequent indigestion). Hence anticipatory satisfaction is sometimes more pleasant than are actual satisfactions. Anticipatory dissatisfaction-feelings occur in states of worry, fear, and allied conditions.

The most important function of these sensory consequents to the operation of interests is to be found in learning. Conditioned learning, 'association,' and 'the law of effect' depend upon the experience of satisfaction- and dissatisfaction-feelings. I cannot here discuss the large topic of learning. It is sufficient to point out that, without the operation of interests, learning does not occur.

3. In what may be called a *like*, there occurs an important variety of interest which at first may seem to be different in kind from ordinary interests. A like is an interest for which the stimulus is the same as its satisfaction. The interest in sweetness is typical. Suppose candy is popped into the mouth of an unsuspecting person, without arousing fear or

other avoidance interests. The taste of sweetness is itself ordinarily an adequate stimulus for the interest whose goal is the taste itself (*i.e.*, the interest has as its goal the taste, sweetness). When this interest has been stimulated by the taste, the continuance of that taste for successive instants does two things: it satisfies the like (interest), thus producing a sensation of satisfaction-feeling, and it also restimulates the same interest. There is thus produced a circular series of stimulations and satisfactions-which-are-also-restimulations. The result is chiefly a continued pleasantness. Because of the temporal relation of stimulus and goal in likes, the release of energy, usually found in the operation of an interest, is frequently absent. As soon as the like is aroused, it is satisfied, so that as soon as energy can be released, it is immediately cut off. As long as the goal of the interest is thus passively attained, activity (the energization of mechanisms) is absent. When, however, the liked taste ceases, the energy-releasing character of the interest appears: the candy is rolled on the tongue, fresh portions are brought into the mouth, etc.; mechanisms are activated that produce a continuance of the liked taste.[16] A like, while apparently different from a fully-developed interest, does then possess all the four features of a typical interest. The temporal relation between stimulus and goal however short-circuits the function, to that it frequently does not exhibit all the features elsewhere found in interests. Likes produce chiefly pleasantnesses.

There are many likes, a considerable number of which are shown by their universality to be inherited. The like for sweetness is plainly inherited. Likes are found in connection with all the senses. The liking for physical activity (the use of the larger muscles) is an important factor in producing exercise, play, games, etc.; the liking for harmonies of various

[16] Good candy moreover produces not only liked tastes, such as sweetness, but also tactile (smoothness) sensations, possibly other tastes and smells. These may also be liked, so that the resultant is a blend of many satisfaction-feelings from various likes.

Such a like as that for sweetness occasionally functions as a fully-developed interest, as in candy-hunger. The interest is stimulated by some other feature than the taste of sweetness, so that long trains of activity may ensue while the organism is searching for candy. Many of the specific appetites aroused when an organism is deprived of essential foods, such as vitamins, protein, etc., are probably likes.

sorts: rhythms, balance, contrasts, repetition, etc. is important in esthetic experience. The liking for the presence of persons belonging to the opposite sex is an important factor, not only in marriage, but also in the enjoyability of ordinary social life, where what is ordinarily called 'sex' does not enter. Likes are ubiquitous in life, animal as well as human, and produce much of the enjoyability of life.

Interests, as described here, including their goals, do not involve any sort of activity that cannot be called 'mechanical' in the philosophical sense of that term. An automatic elevator, when a button for a particular floor has been pressed, actually possesses a goal in our sense of the term—the elevator continues to operate in a definite manner until that particular floor is reached, whereupon, having attained its 'goal,' the operation stops. By utilizing the above description of interests and mechanisms, it is indeed possible to construct a machine that will solve simple mazes.[17] If there are any vitalistic features in interests (I am leaving this question entirely open), they must lie, not in the fundamental nature of interests, but in their capacity for producing sensations or in the conscious processes that operate in connection with interests, such as conceptual thought, reflective choice, etc.

[17] A wheeled table, similar to those used in hospitals, may serve as the 'organism' of this machine. It should be furnished with an electric battery to supply 'energy' and with motors for orienting its wheels and moving them in any one of four directions, which apparatus constitutes its four 'psychological mechanisms.' The closing of the main switch constitutes the 'stimulus' to the table's single 'interest.' A shelf, located somewhere in the room, does duty for the table's 'goal-object.' The situation of being under the shelf constitutes its 'goal,' since the table is supplied with an elevated arm, which is depressed when the table moves under the shelf, thereby opening the main switch and stopping the supply of 'energy.' When the table's 'interest' is 'stimulated,' but the table is not moving, its 'energy' is routed to a roulette wheel, which causes a ball to roll into one of four pockets, the particular pocket being chosen by chance. Each pocket serves to 'stimulate' one of the table's four 'psychological mechanisms,' thereby actuating the machinery for moving the table in one of its four possible directions. A plunger on each of the table's four sides is pushed in when the table reaches a wall of the room. The moving of any of these plungers does duty for the production of 'dissatisfaction-feeling' upon a failure to reach the 'goal.' The plunger is arranged to stop the table's translatory motion and to reactivate the roulette mechanism, thus causing the table to make another chance choice of a different direction of movement. These stoppings, chance choices, and movements continue until the table arrives under the shelf, its 'goal' is attained, the main switch is opened, and the machinery stops. It is evident that such a machine can eventually reach any part of an enclosed room, so that it will finally attain its 'goal' location under the shelf, and thus 'solve' a simple maze.

The foregoing four features: (*a*) receptivity for a stimulus, (*b*) capacity for releasing energy, (*c*) a goal, and (*d*) the capacity for producing satisfaction- or dissatisfaction-feelings are, I believe, all to be found in every interest. In some cases, other features are added. Interests and mechanisms appear to constitute the *two sole types of elementary psychological functions*, so that the whole of behavior may be described in terms of them. The foregoing two generalizations can be established only by an exhaustive inventory of all behavior, which is impossible here. As far as animal and human behavior has been surveyed, however, I have found no exception. Should these two generalizations indeed be correct, they should make possible a clarification of psychological thought and should call attention to many neglected features, such as previously unnoticed interests, the nature of 'feeling-tone,' etc.

The ability of these conceptions to illuminate the fields of the 'elementary feelings' and of 'personality' have already been hinted. To show their fecundity, I shall attempt to indicate how they can clarify such important psychological concepts as instinct, emotion, drive, urge, wish, desire, purpose, and directed activity.

4. An *instinct* may be compendiously defined and described as in inherited interest. (Inherited mechanisms are reflexes.) Such a description implies that while, in connection with the important groups of instincts (hunger, sex, self-assertion, etc.) no particular behaviors (mechanisms) need be inherited, yet there are inherited certain specific goals, together with the structures constituting the psychological functions (interests) that include those goals and that guide behavior towards those goals. Thus the controversy may be sublated between those who argue that there are no instincts because no definite and invariable behavior is connected with 'instincts' and those who argue that 'instincts' exist and are the important driving forces in life. Our conception leads us to conclude that instincts *are* inherited, but that human instincts are not mechanisms (with minor exceptions, especially among the emotions). What is inherited

are not propensities to any *particular* behaviors, but psychological functions that will select whatever behaviors seem to conduce to the attainment of certain invariable goals. The mistaken assumption has been that instincts are mechanisms, whereas they are fundamentally interests.

The conception of instincts as inherited interests indicates that the lists of 'instincts' given by some authorities (McDougall's eighteen or more 'innate propensities,' for example) are quite inadequate. An instinct (inherited interest) may be identified by the invariable presence in *all* normal members of a species, of a capacity (not always realized, because not always adequately stimulated) for performing varying types of actions leading towards an identical goal. If each separate goal belongs to a separate instinct, what have traditionally been called 'instincts' are really constellations of inherited interests. 'Sex,' for example, includes such factors as a general like for the company of persons of the opposite sex, together with a general like for the perception of features connected with the opposite sex (manifesting itself in distinctive 'feminine' and 'masculine' dress, attitudes, etc.), as well as a like for association with, perception of, and other relations with some particular person of the opposite sex. There is a general goal in sex: the coming close to an individual or individuals of the opposite sex, but other less general goals are more important in actual life (*i.e.*, they are more intense and produce more behavior). In any particular culture, there are also many identical acquired interests common among individuals (types of courtship, dancing, kissing, etc.) nearly always acquired by most individuals belonging to the culture. Some inherited mechanisms (such as those for certain sex movements) moreover nearly always become associated with one of the interests included in 'sex,' but that connection is plainly acquired, not inherited, in the case of human beings. Careful study of 'sex-instinct' thus resolves it into a large *group* of inherited interests (since there are *many* goals sought for) plus certain inherited mechanisms not innately connected with those interests, but associated with them in their developed forms, plus another large group

of acquired interests and mechanisms which are the same for a given culture but sometimes vary from culture to culture, together with many other interests and mechanisms (*e.g.*, habits of fondling) that differ from individual to individual. What has been called a single 'instinct' is really a large constellation. It is the duty of psychology to analyze and indicate the varied individual interests and goals involved in such groups of interests.

5. Emotion is another form of behavior to which the conceptions of interest and mechanism may fruitfully be applied. The *primary emotions* may be defined as inherited interests (*a*) whose goals are of a highly general nature (*e.g.*, escape, attack), (*b*) which typically release large amounts of energy, and (*c*) with which are innately linked certain inherited mechanisms (*e.g.*, the startle pattern, the releasing of adrenalin into the blood). Because emotions are primarily interests, not mechanisms, they are to be distinguished from one another chiefly by their goals. Fear is an interest whose goal is the highly generalized situation of escape; anger is the interest whose goal is the highly generalized one of attack (physical *or* psychical). The adequate stimuli for emotions are also highly general. Anything or any situation that is perceived as dangerous and uncontrollable may arouse the emotion (interest) of fear. Any situation which is perceived as hampering may arouse the emotion of anger. Because these interests release large amounts of energy and produce sensational effects, they have secured much attention. Their violent nature has led them to be called by a different name from the 'instincts,' although they are quite as much inherited interests as are 'instincts.' Development adds features to the primary emotions, producing what have been called the secondary emotions, which are acquired interests using the primary emotions as components. Since the goal of an emotion is highly general, few specific overt behaviors (mechanisms) are invariably connected with these functions. Hence psychologists who have assumed that the mechanism is the sole fundamental type of psychological function (*e.g.*, some behaviorists) have not been able to deal successfully

with emotions. When, however, we understand that emotions are primarily interests, not mechanisms, it becomes possible to treat them compendiously and adequately, by determining their typical stimuli, goals, associated mechanisms, etc. The foregoing brief analysis may indicate the unusual suggestiveness of the concept 'interest' when applied to the emotions.

6. The conceptions of interest and mechanism also enable us to distinguish different ways that interests and mechanisms are combined and developed. Psychologists have often used synonymously such terms as drive, desire, purpose, etc. In untutored thought, however, these terms do not have precisely identical meanings. We may accordingly distinguish different ways that interests are developed and suggest different terms for important types of organization.

A frequently activated interest usually comes to link with itself one or more psychological mechanisms, so that certain behaviors are usually produced by the stimulation of that interest. Such a permanent or semi-permanent organization of an interest with certain mechanisms may well be called a *drive*. When a hungry rat, which has been trained to run a maze, is allowed to enter the maze, the hunger-interest plus the perception of the familiar situation brings about a regularly repeated set of behaviors (running the maze, looking for food, chewing, etc.), which behaviors end in the ingestion of the food. We may well summarize this situation by saying that the trained rat possesses a drive for food. A drive is then an interest plus mechanisms formed into a single function. An interest as yet uncomplicated by any associated mechanisms may be called a *bare interest*. It has previously been pointed out that the concept 'drive' is inadequate to explain all goal-motivated behavior, but, as describing an acquired linkage of an interest and mechanisms, this concept is highly useful and important.

In some cases, an interest may have been aroused (so that activity directed towards a goal may even be going on, because certain mechanisms are functioning), yet the organism may not be aware either of its interest or of its goal. Such an

unconsciously or semi-consciously operating interest may be called an *urge*. Boring, for example, reports cases in which his subjects only discovered they were thirsty after they had walked to a spigot and had turned it on. An urge is an unconscious drive.

Acquired interests do not invariably possess a supply of energy; until they become well-established, their energy is furnished them by inherited or well-established interests. When an acquired interest is furnished a sufficient amount of energy by the organism's dominant interests, the new interest may well be said to have been *adopted*.

It is also possible for an interest to become organized and to have all its four features present as capacities, without possessing any supply of energy; such an interest has only the capacity to release energy, when that energy is secured. The interest than remains latent, usually producing no overt effects, even when stimulated.[18] It is possible for the organism to discover the nature and goal of such a latent interest by allowing it to operate tentatively (with an inadequate supply of energy), and observing the types of action that tend to be activated. Such an interest may be called a *mere wish*.

By contrast, an interest that has been adopted by the organism, the goal of which is also consciously recognized, may be called a *desire*. It has then been given an adequate supply of energy. (It does not however function continuously, unless it is adequately stimulated as well as adopted.) When an interest has not only been adopted, but its goal is known and means to the attainment of that goal are known (*i.e.*, a plan of action has been made, at least tentatively, so that mechanisms and possibly also subordinate interests have been selected), the resulting organization may be called a *purpose*. In this manner, the concept of a fully developed and conscious purpose may be analyzed into its elements, the most important of which is an interest, the main features of which, at least, are mechanical. The foregoing variations in the linking together and development of interests and mechanisms are sufficiently distinct and important to justify the use

[18] If, however, by chance its goal is attained, satisfaction-feeling may result.

of different terms for each one. Since common usage offers a set of distinct names, we can well distinguish these different sorts of organizations by these different names.

Directed activity is obviously the most important phenomenon in connection with interests. In animals, certain drives (which function to produce directed activity) are inherited; in man, interests seem to be inherited only in the form of bare interests (with minor exceptions among the emotions). If so, all human and much animal directed activity is acquired. Such learned directed activity may be of two sorts: (*a*) In some cases, the directed activity is more or less stereotyped. It is then produced by a mere drive—an interest with certain associated mechanisms, each of which functions when it is stimulated. (*b*) In other cases, the directed activity is adaptive and quite variable. A child, influenced by the goal of avoiding punishment, tries one after another means of wheedling her parent. In such cases, the main interest, in avoiding punishment, has generated a subordinate interest, whose goal is to influence the parent to leniency. The directed activity is then not produced by even a moderately stereotyped drive, but by a subordinate interest, which successively activates various mechanisms that may not all have previously been connected with that interest. Topography, with its conception of 'forces,' positive and negative, is a very convenient means of summing up the main features in very complicated situations, but it is likely to obliterate fundamental distinctions in the nature of the psychological functions involved, such as the difference between main interests and subordinate interests. Directed activity in human nature results from an acquired complication of functions and may be produced in radically different ways.

Summary.—This paper attempts to determine and define the elementary units of behavior. These permanent or semipermanent dynamic structural factors are called *psychological functions*. Such functions are found to occur in only two different elementary types: psychological mechanisms and interests. Each of these types possesses certain invariable

characteristics, by which they may be identified. Each occurs in both inherited and acquired forms. Directed behavior is not due to any elementary function, but to compounds of different types of functions.

Psychological mechanisms possess three fundamental features: (1) an organization of receptors for identifying a stimulus, (2) structures for producing a specific response, and (3) a capacity for inner facilitation or inhibition. Each different response characterizes a different mechanism. *Reflexes* are inherited mechanisms, *habit-chains* are acquired mechanisms. Acquired mechanisms obtain all their psychological energy from interests. Practically all behavior results from the functioning of mechanisms.

Interests possess four fundamental features: (1) an organization of receptors for receiving and identifying a *stimulus*, (2) the capacity for releasing psychological *energy*, and (3) a *goal*, which is the organismic situation, upon the occurrence of which action ceases. The goal is to be distinguished from the *goal-object*, which latter is any object, the securing of which is necessary in order to attain the goal-condition. (4) Single interests also invariably possess the capacity for producing a unitary amount of pleasant sensation, here called a *satisfaction-feeling*, which occurs upon the attainment of the goal, or alternatively, a unit of unpleasant sensation, here called a *dissatisfaction-feeling*, which occurs upon finding the goal of an active interest to be unattainable. Since each separate goal belongs to a distinct interest, the number of interests in any individual is large. An important variety of interest is the *like*, which is an interest whose stimulus and goal are the same.

The foregoing analysis of the psychological factors underlying observed behavior is to be judged by its power of organizing and explaining behavior. It has been shown to illuminate some important psychological problems. *Instincts* may be described succinctly as inherited interests. The *primary emotions* may be regarded as certain inherited interests with highly general goals, large amounts of energy, and a few innately linked inherited mechanisms. *Personality*

is the totality of interests and mechanisms in an organism. '*Feeling-tone*' is a blend of individual satisfaction- and/or dissatisfaction-feelings originating from various interests. It is also possible to distinguish between a *bare interest*, a *drive*, an *urge*, and a *purpose*. Throughout this study, the attempt has been made to specify clearly and exactly the nature of each type of entity discussed, in order that it may be possible to identify them and to utilize these concepts in experimental investigation. The unusual explanatory and organizing power of the interest and the mechanism is shown in their application to the foregoing psychological problems.

A DRIVE-CONVERSION DIAGRAM [1]

BY EDWARD C. TOLMAN

University of California

The present paper is an attempt to schematize the interconnections between the basic biological drives, the derived social techniques and also between these and certain types of final behavior-propensity. Such interconnections I shall call 'conversion-channels.' That is to say, I shall conceive that the original energy from the basic biological drives gets 'converted' (when these biological drives are frustrated) first into the auxiliary social techniques and, finally (if these latter be also frustrated), into other still more derived behavior-propensities.

The scheme here to be presented was developed originally in an attempt to analyze the motivational causes of *war*.[2] For that reason the discussion is somewhat limited as to range. Nevertheless, the general principles evolved have, I believe, some general validity—that, in fact, they throw some new light upon the whole problem of motivation.

Table 1 shows the list of Biological Drives which I would assume. Practically every item in this list can be identified in terms of some well-known animal experiment (or field-observation). Further, the items have been grouped under the two headings: the *appetites* and the *aversions*. The appetites are to be conceived as set going primarily by internal metabolic conditions and as ended by the reaching of positive goal-objects; whereas the aversions are conceived as set going primarily by actual or potential environmental presences and

[1] This paper was written to be presented as part of a Round Table on Recent Advances in Motivation under the auspices of the National Institute of Psychology at the Meetings of the American Psychological Association, September 3, 1942, but because of the War Emergency these meetings had to be cancelled.

[2] *Cf.* E. C. Tolman, *Drives toward war*. New York: D. Appleton-Century Company, 1942. The writer wishes to acknowledge his indebtedness to the D. Appleton-Century Company for permission to reprint the Tables and Figures to be presented here.

TABLE 1

THE BIOLOGICAL DRIVES

(*A*) *The Appetites*
- Hunger drive
- Thirst drive
- Sex drive
- Maternal (suckling of young) drive
- Nurturance (giving aid and protection) drive
- Infantile dependence drive
- Nest building and nest-using drive
- General activity drive
- General exploratory or curiosity drive
- Rest and sleep drive
- Elimination drive (urination and defecation in specific types of locale)
- Play and æsthetic drives

(*B*) *The Aversions*
- Fright (injury-avoidance)
- Aggression (obstruction-avoidance)
- Gregariousness (isolation-avoidance)

ended by the avoidance of such presences. It may also be noted, in passing, that (perhaps somewhat unorthodoxly) I have included the 'play' and 'æsthetic' drives among the basic appetites and simple gregariousness (*i.e.*, the avoidance of isolation from the group) among the basic aversions.

Table 2 presents a list of what I would call the principal derived Social Drives (or Social Techniques). I prefer the term Techniques to that of Drives because I wish to emphasize the essentially instrumental or ancillary character of these social propensities. Their primary function is to be instrumental to the more basic Biological Drives. And they are

TABLE 2

THE SOCIAL DRIVES OR TECHNIQUES

A. Self-Assertive Techniques
- Establishing dominance status
- Competitive acquisition
- Demanding and soliciting food
- Succorance (demanding aid and protection)

B. Collective Techniques
- Imitation
- Mutual assistance (grooming)
- Cooperative work

C. Self-Abasive Techniques
- Submitting (accepting non-dominance status and withdrawing from competition)
- Giving (in response to solicitation)

D. Collective Assertive Techniques
- Loyalty to group (attack on enemies of group)

undoubtedly more a result of experience and of learning than are the Biological Drives. Again all the individual items in the list can be spotted in terms of well-known animal field-observations or experiments—this time, primarily observations or experiments upon monkeys or chimpanzees. Further, it is to be noted that the items have been grouped under the four headings of: (*A*) *Self-Assertive Techniques*, (*B*) *Collective Techniques*, (*C*) *Self-Abasive Techniques* and (*D*) *Collective Assertive Techniques*. This grouping corresponds, I believe, to certain real internal coherencies. That is to say, each sub-group of techniques tends, I would believe, to hang together in a considerable degree and to become strong or weak as a whole for given individuals in given situations.

Turn, now, to Figure 1. This figure indicates the position and character of the routes or 'conversion-channels' through which, as I conceive it, the energy from the basic Biological Drives gets converted (when these Biological Drives are frustrated) first into the Social Techniques and ultimately, if these latter be frustrated, into various other still more derived Behavior-Propensities. That is to say, the arrows in the figure represent such channels. And the words enclosed in the dashed rectangles mounted on these arrows indicate those psychological mechanisms which I would conceive to be causatively operative in producing such channels. These mechanisms consist of 'Instrumental Learning' and of various ones of the Freudian Dynamisms.

Examining the details, we observe that, when the Biological Drives are frustrated, what I conceive as first happening is that the energy from these Biological Drives gets converted into either Self-Assertive Techniques or into Collective techniques—sometimes more into the one and sometimes more into the other. In both types of conversion the mechanisms which are causative in determining the channels are those of *learning* and of *fixation*. That is to say, the frustrated child or chimpanzee *learns* either to be Self-Assertive or to be Collective because, in the given situation, the one or the other type of technique proves to be the more helpful in removing his biological frustrations. And then, secondly,

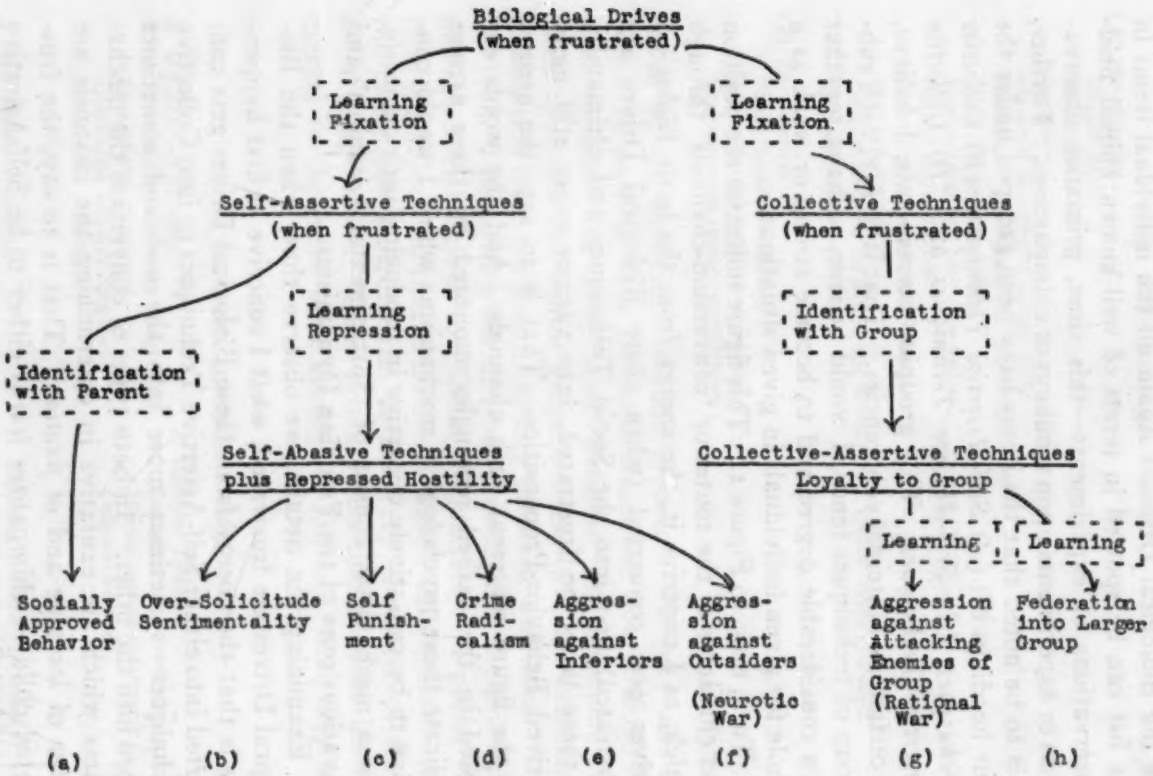
Biological Drives
(when frustrated)
Learning Fixation
Learning Fixation
Self-Assertive Techniques
(when frustrated)
Collective Techniques
(when frustrated)
Learning Repression
Identification with Parent
Identification with Group
Self-Abasive Techniques plus Repressed Hostility
Collective-Assertive Techniques Loyalty to Group
Learning
Learning
Socially Approved Behavior
Over-Solicitude Sentimentality
Self Punish-ment
Crime Radi-calism
Aggres-sion against Inferiors
Aggres-sion against Outsiders (Neurotic War)
Aggression against Attacking Enemies of Group (Rational War)
Federation into Larger Group
(a)
(b)
(c)
(d)
(e)
(f)
(g)
(h)

FIG. 1.

the dynamism of *fixation* tends to come into play and to cause the particular conversion-channel to become relatively rigid and enduring. That is to say, the child or chimpanzee tends to persist in being self-assertive, or in being collective, even in new situations in which such respective techniques are no longer appropriate. This would be Allport's 'Functional Autonomy.'

If we look now at the left-hand side of the figure, we see indicated there that, when the Self-Assertive Techniques are themselves frustrated, their energy gets further converted, either through *identification with the parent* into (*a*) the final behavior-propensity of socially acceptable behaviors, or through *instrumental learning* accompanied by *repression* into the Self-Abasive Techniques. Let us consider this latter possibility further. These Self-Abasive Techniques are conceived as achieved only by an accompanying repression of the hostility against the frustrating parents or other dominating agents. But this repressed hostility then tends to come out, in its turn, in a variety of *indirect* ways such as (*b*)—to—(*f*) listed along the bottom of the figure, that is to say, in ways such as: (*b*) over-solicitude and sentimentality; (*c*) self-punishment; (*d*) crime and radicalism; (*e*) aggression against inferiors; and (*f*) aggression against outsiders. These different behavior-propensities each occurs, however, only as a result of its own special conversion-channel. And each such conversion-channel is to be conceived as determined in its turn by a specific dynamism or dynamisms. There was not room, however, in Figure 1 to indicate the character of these latter.

Figure 2 presents, therefore, an enlargement of that area of the scheme projecting downward from Self-Abasement and the accompanying Repressed Hostility. We see now that it is the dynamism of *reaction-formation* which I assume to be responsible for the channel whereby the repressed hostility gets converted into (*b*) over-solicitude or sentimentality. And it is the dynamism of *introjection* which I conceive to be responsible for the conversion-channel leading to (*c*) self-punishment. Similarly, it is the dynamism of *symbolization*

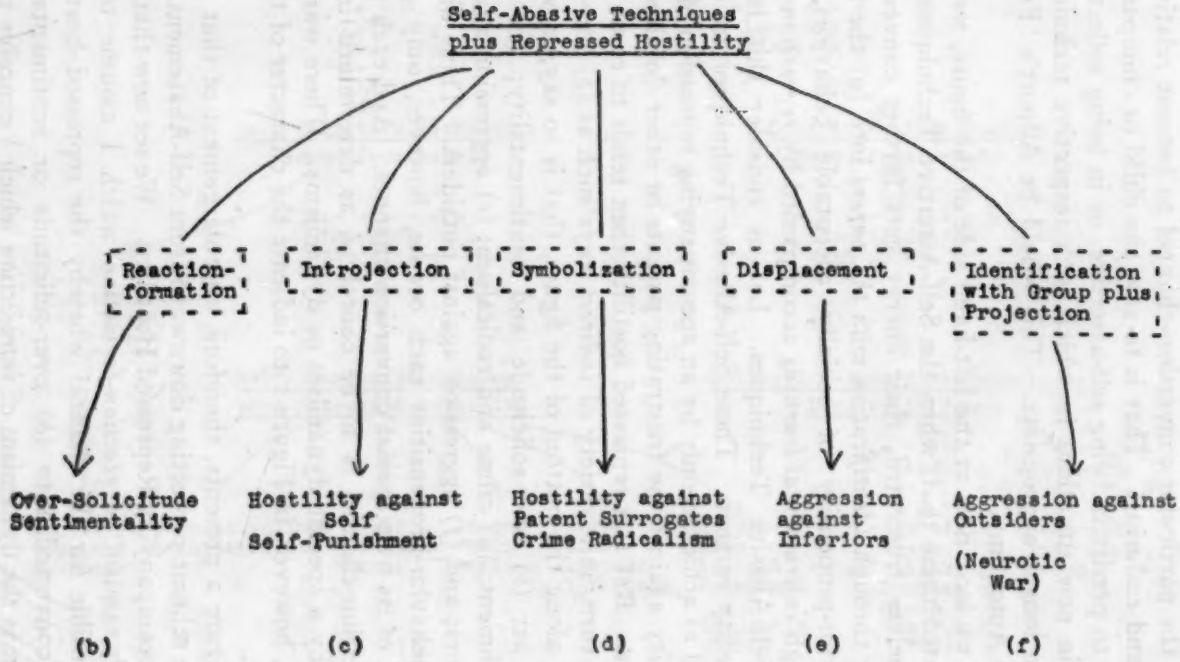
Self-Abasive Techniques
plus Repressed Hostility
Reaction-formation
Introjection
Symbolization
Displacement
Identification with Group plus Projection
Over-Solicitude
Sentimentality
Hostility against Self
Self-Punishment
Hostility against
Patent Surrogates
Crime Radicalism
Aggression against Inferiors
Aggression against Outsiders
(Neurotic War)
(b)
(c)
(d)
(e)
(f)

FIG. 2.

which is conceived as mostly responsible for the channel leading to (*d*) hostility against parent surrogates, that is to say, to crime and what we may call *neurotic* radicalism. Further, it is the dynamism of *displacement* which is conceived as mostly responsible for the conversion-channel leading to (*e*) aggression against inferiors. And, finally, it is the two dynamisms of *identification with the group* and of *projection* which are conceived to be primarily responsible for the channel leading to (*f*) aggressions against outsiders; *i.e.*, to *neurotically* motivated War. It is not to be supposed, however, that the actions of these dynamisms are necessarily mutually exclusive. Thus the dynamism of symbolization is probably also involved to some extent in all of the five different conversion-channels and not merely in that which leads to crime and radicalism. And so, no doubt, some of the other dynamisms, such as displacement, may be said to be involved in all of the conversion-channels.

Let us return now to Figure 1, and observe the right-hand side of the diagram. Here is indicated what I suppose to happen when, and insofar as, the energy from the frustrated Biological Drives gets converted, not into the Self-Assertive Techniques, but into the Collective Techniques. The diagram indicates, that is, that when the Collective Techniques themselves are interfered with, or frustrated, then the Dynamism of *identification with the group* may be expected to come into play and to provide a conversion-channel through which the energy from the frustrated Collective Techniques gets converted into the Collective Assertive Techniques (namely, into Loyalty to the Group). But, further, this loyalty to the group may then through *learning* come to express itself (*g*) in planned attacks against interfering outsiders; *i.e.*, in *war*. But, in this case, the War can be deemed relatively rational by contrast to that listed over (*f*), which was, as we saw, merely an outlet (through *projection* and *group-identification*) for repressed hostilities. Or, secondly, this loyalty to the group may also, I believe (although here I may be leaving the role of the psychologist for that of the preacher), come through *learning* to be converted into: (*h*) the

behavior of federating with the opposing groups, thus producing some still larger group within which the original oppositions can be resolved. That is to say, such a new conversion-channel leading to the behavior of federating will, I assert, be established as soon as mankind discovers, *i.e.*, *learns*, that wars are a surprisingly inefficient way of preserving the continued existence of group-life—even the group-life of the victors.

Summing up, there are certain general points to be made. First, I should like to emphasize that even though this Drive-Conversion Diagram may be both somewhat superficial and incorrect as to detail and even though its resultant explanation of the two types of motive for War may be wrong, I do believe that it provides a useful and essentially correct way of conceiving the interdependence between the more basic and the more derived motives. The basic energy comes from the Biological Drives. The Social Drives or Techniques are secondary motives which are derived from the Biological ones—partly through innate endowment and partly as a result of instrumental learning. And such Social Drives or Techniques are to be conceived as themselves interconnected in various ways as a result of learning and of the dynamisms. And from these Social Techniques (when these in their turn are frustrated) there are derived such further behavior-propensities as are listed at the bottom of the diagram.

Secondly, the particular outcomes shown are but a few examples of the possible directions of conversion which might occur. If, for example, I had started out with an interest not in war but in, say, the activity of 'getting ahead' in America, the channels leading from the Self-Assertive Techniques would have to have been multiplied many times to indicate all the specific varieties of getting ahead, which tend to get set up in different individuals in our society.

Thirdly, I should like to point out that, in treating the Biological Drives as a unit and the Self-Assertive Techniques as another unit and the Self-Abasive, the Collective, and the Collective-Assertive Techniques as still other units, I have undoubtedly oversimplified and blurred the concrete facts.

Thus, for example, whether Self-Assertion or Collectivity gets learned may well depend in some part upon which particular biological drive it is which has been frustrated. And, again, whether Self-Abasement or *identification with parent* follows (in the case of frustrated Self-Assertion) may also depend in part upon which specific expression of self-assertion it was which was frustrated. And, similarly, the particular indirect expression of frustrated hostility which comes out may also depend in part on the particular subvariety of self-abasement which was involved. And so on. In other words, the point I am making here is that the conversion-channels should be conceived as running more from specific to specific and less from biological drives in general, to self-assertive drives in general, etc. Certainly the Freudian discussions suggests that the libido cathexes are relatively specific affairs. Nevertheless, I still believe that in some sense my grouping of all biological drives into one unit (of course Freud himself did this with the id), all self-assertive techniques into another unit, all collective techniques into another, and all collective-assertive techniques into still another, has some real social and psychological validity.

A fourth point, which needs more elaboration than I have given it, concerns the nature of the conversion-channel itself. A conversion-channel, as I am conceiving it, is really a two-sided affair. (1) On the one hand, it is, as I have already emphasized, a route for the converting of energy, or tension, or libido, or drive-force (or whatever you want to call it) from the original drive or behavior-propensity (when the latter is frustrated) to some other dependent drive or behavior-propensity. But (2), on the other hand, a conversion-channel is also in the nature of a 'belief' by the organism to the effect that the carrying out of the derived drive, or behavior-propensity, is a 'means' toward the achievement of the goals of the original drive or propensity. It is now, no doubt, this latter, or 'belief'-side, of the conversion-channel against which *your* repressed (or maybe unrepressed) hostilities will be mostly directed. In support, however, of *my* belief that such a 'belief'-quality is in truth to be ascribed to conversion-

channels, let me cite the fact that new behavior-propensities tend to be abandoned when they do not prove to contribute to the original goals. Conversion-channels are, that is to say, to a considerable extent 'docile' and adjustive relative to the ultimate outcomes. There is, to be sure, only a tendency towards such docility. Particularly is this property of docility only a tendency when the conversion-channel is a result of a dynamism rather than of learning. Thus, for example, the 'taking it out on inferiors' (as a way of getting even with one's parents) tends to persist even though not really successful. You may feel, in short, that the interconnection between the original 'getting even' and this derived 'taking it out on inferiors' is not properly to be called a belief at all. Yet the psychoanalysts would tell us that, when they analyze such individuals, there is some sense in which the unconscious of the patient does contain just such childish beliefs. The dynamisms do seem, in short, to be expressions of childish modes of thinking (*i.e.*, believing). Furthermore, insofar as a conversion-channel is to be conceived as a belief it has the two accompanying properties of (1) being more or less correct and (2) of being more or less 'docile' and susceptible to correction as a result of changes in the actual environmental realities.

To sum it all up, then, as regards the conversion-channel. The latter is, as I conceive it: (1) a route or channel through which energy or tension or libido gets transmitted from one drive or behavior-propensity to another. It is also (2) a belief, that the consummation of the derived behavior-propensity will contribute to the reaching of the goal of the original behavior-propensity. (3) This belief may be relatively true or false. And (4) it may be more or less docile and ready to change, if it be false. If a conversion-channel is primarily a result of learning, it will be relatively docile and reasonable; whereas, if it is primarily a result of a dynamism, it will be relatively insensitive and childlike.

Finally, it must be noted that I have left practically untouched the fundamental problem of why in a particular instance learning, or particular dynamisms, do or do not

appear. Why, say, does one individual go in for 'introjection' and resulting self-punishment whereas another (with the same repressed hostilities) goes in for 'displacement' and taking it out on inferiors? Or, again, what are the conditions which determine the learning of Self-Assertiveness in the one case and the learning of Collectivity in the other? And what are the factors, internal and external—*i.e.*, of nature and of nurture—which favor (or prevent) easy identification with parents? And so on. Neither the Freudians nor anybody else can, as yet, give us adequate answers. Nobody really knows in detail how (or how much) heredity works, nor how (or how much) different types of environmental condition are active in producing learning or in favoring the operation of particular dynamisms.

As a last word, then, I would state frankly that such a Drive-Conversion Diagram, as that presented, would still be (even if it were correct and final—which obviously it is not) a scheme more for the asking of important questions than for the presenting of the final and ultimate answers.

DYNAMICS OF PERSONALITY ORGANIZATION. I

BY A. H. MASLOW

Brooklyn College

I. The Nature of Psychological Data and Methods [1]

The 'fundamental datum' of psychology.—It is very difficult to say just what this fundamental datum is, but it is easy to say what it is not. There have been many 'nothing but' attempts, but all these reductive efforts have failed. We

[1] In order to answer certain inevitable questions, these preliminary remarks are necessary. I conceive this paper to be, not a theoretical paper in the ordinary sense, but rather a set of theoretical conclusions emerging directly from research data on the organization of the human personality, being so to speak, only one step ahead of these data and firmly based upon them.

This point needs to be made in order to clarify the relation of these conclusions to those of Gestalt psychology, which they parallel very closely at many points. The attitude with which I initially entered upon these researches was one simply of dissatisfaction with extant knowledge. If I could be said to have had any theoretical bias at all, it was rather like the very atomistic-mechanical approach which is attacked in this paper. If I have arrived at a dynamic-holistic view, it is because the facts I uncovered forced me to it, rather than because of any previous loyalty to such a theory. It is clear, then, that the parallels to the theories in, for instance, Wertheimer's earliest papers constitute in my eyes an independent corroboration of Gestalt theory which is all the more forceful because of the different data studied and methods used. As might be expected, there are some disagreements with certain statements by various Gestalt psychologists, but these may be considered to be not so much contradictions as possible extensions of Gestalt theory dictated by a new kind of material.

I wish also to take this opportunity to express my gratitude to the many psychologists (and others) with whom I have discussed and debated various issues. Among these are Drs. Wertheimer, Lewin, K. Goldstein, Munroe, Bateson, Gruen, Koch and Prenowitz. Disagreements being as common as agreements, these individuals are of course not to be held responsible for, or even sympathetic with, my conclusions.

The theories expressed in this paper are based upon the following researches by the writer: The dominance drive as a determiner of the social and sexual behavior of infra-human primates. I, II, III, IV, *J. genet. Psychol.*, 1936, **48**, 261–277, 278–309 (with S. Flanzbaum), 310–338; 1936, **49**, 161–198. Dominance-feeling, behavior and status, Psychol. Rev., 1937, **44**, 404–429. Dominance-feeling, personality and social behavior in women, *J. soc. Psychol.*, 1939, **10**, 3–39. Dominance-quality and social behavior in infra-human primates, *J. soc. Psychol.*, 1940, **11**, 313–324. A test for dominace-feeling (self-esteem) in women, *J. soc. Psychol.*, 1940, **12**, 255–270. *The social personality inventory: a test for self-esteem in women*, Stanford: Stanford Univ. Press, 1942. The dynamics of psychological security-insecurity, *Character & Pers.*, 1942, **10**, 331–344. The relation between self-esteem and sexuality, *J. soc. Psychol.*, 1942, **16**, 259–294. Preface to a theory of motivation, *Psychosomatic Med.*, 1943, **5**, 85–92. A theory of motivation, Psychol. Rev., 1943, **50**, 370–396.

know that the fundamental psychological datum is not a muscle twitch, nor a reflex, nor an elementary sensation, nor a neuron, nor even an observable bit of overt behavior. It is a much larger unit, and the steadily growing agreement among more and more psychologists is that it is an adjustive act which necessarily involves an organism, a situation and a goal or purpose. In a word, we wind up with the paradoxical conclusion that the fundamental datum of psychology is the original complexity which psychologists had set themselves to analyze into 'elements' or fundamental units. If we use the concept of 'fundamental datum' at all, it is certainly a peculiar sort of concept, for it refers to a complex and not a simplex, a whole rather than a part.

If we ponder this paradox, we can easily come to understand that the search for a fundamental datum is itself a reflection of a whole world view, a scientific philosophy that assumes an atomistic world—a world in which 'complex' things (phenomenal objects) are built up out of 'simple' elements. The first task of such a scientist then is to 'reduce' the so-called 'complex' to the so-called 'simple.' This is to be done by analysis, by finer and finer separating until we come to the irreducible. This task has succeeded well enough elsewhere in science, for a time at least. In psychology it has not.

This conclusion exposes the essentially theoretical nature of the entire reductive effort. It must be understood that this effort is *not* of the essential nature of science in general. It is simply a reflection or implication in science of an atomistic, mechanical world view which we now have good reason to doubt. Attacking such reductive efforts is then not an attack on science in general, but rather on one of the possible attitudes toward science. We still have, however, the original problem with which we started. Let us now rephrase it so as to ask, not "What is the fundamental (irreducible) datum of psychology?" but rather, "What is the subject matter of psychological study?" and, "What is the nature of psychological data and how can they be studied?"

Holistic-analytic methodology.—How shall we study our

individual if not by reducing him to his 'simple parts'? It can be demonstrated that this is a much simpler problem than it is considered to be by some who reject the reductive effort.

It is necessary to understand first that objection is made not to analysis in general but only to the particular kind of analysis which we have called reduction. It is not at all necessary to deny the validity of the concepts of analysis, of parts, etc. We need simply redefine these concepts so that they may allow us to do our work more validly and more fruitfully.

If we take an example, such as blushing or trembling or stammering, it is easy to see that we may study this behavior in two different ways. On the one hand we may study it as if it were an isolated, discrete phenomenon, self-contained and understandable in itself. On the other hand, we may study it as one expression of the whole organism, attempting to understand it in its richness of interrelationships with the organism and with other expressions of the organism. This distinction can be made clearer if we make the analogy with the two possible ways of studying an organ like the stomach. (1) It can be cut out of the cadaver and laid on the dissecting table, or (2) it can be studied *in situ*, *i.e.*, in the living, functioning organism. The results that are obtained by these two approaches are different in many ways, anatomists now realize. Knowledge obtained by the second approach is more valid and more useful than the results obtained by the equivalent of *in vitro* techniques. Of course dissection and isolated study of the stomach are not eschewed by modern anatomists. These techniques are used, but only against the broad background of *in situ* knowledge, of knowledge that the human body is not a collection of separate organs, of the realization that organization in the cadaver is not the same as that in the living body. In a word, anatomists do all that was done in the past but (1) they do it with a different attitude, and (2) they do more—they use techniques in addition to those used traditionally.

Just so can we turn to our study of personality expression with two different attitudes. We can conceive either that

we are studying a concrete entity, or that we are studying a part-of-a-whole. The former method we may call 'reductive-analytic.' The latter we may call 'holistic-analytic.' One essential characteristic of holistic-analysis of the personality in actual practice is that there be a preliminary study or understanding of the total organism, and that we then proceed to study the role which our part-of-the-whole plays in the organization and dynamics of the total organism.

In the two series of researches upon which this paper is based (studies of the self-esteem syndrome and of the psychological security syndrome) this holistic-analytic method was used. Actually these results may be phrased not so much as studies of self-esteem or of security in themselves, but as studies of the role of self-esteem or of security in the total personality. In specific terms this means that the writer felt it necessary to understand each subject as a whole, functioning, adjusting individual before he could attempt to find out specifically about the self-esteem of the subject. Thus before any questions were asked specifically about self-esteem, explorations were made of the subject's relations to his family, to the kind of sub-culture he lived in, of his general style of adjusting to his main life problems, his hopes for the future, his ideals, his frustrations and his conflicts. This procedure continued until the writer felt that he understood the subject as well as was possible with the simple techniques being used. Only then did he feel that he could understand the actual psychological meaning for self-esteem of specific bits of behavior.

We can indicate by example the necessity of this background of understanding for proper interpretation of a specific behavior. In general, people with low self-esteem tend to be more religious than people with high self-esteem, but obviously there are many other determinants of religiosity as well. To discover whether, in a specific individual, religious feeling 'means' a necessity to lean on some other source of strength, one must know the individual's religious training, the various external compulsions for and against religion which play on the subject, whether or not his religious

feeling is superficial or deep, whether it is external or sincere. In a word, we must understand what religion means for him as an individual. So a person who goes to church regularly may actually be rated as *less* religious than one who does not go to church at all, because (*a*) he goes to avoid social isolation, or (*b*) he goes to please his mother, or (*c*) religion represents for him not humbleness but a weapon of domination over others, or (*d*) it marks him as a member of a superior group, or (*e*) as with Clarence Day's father, "It is good for the ignorant masses and I must play along," or — — — and so on to z. He may in a dynamic sense be not at all religious and still behave as if he were. We must obviously know what religion means for him as an individual before we can assay its role in the personality. Sheer behavioral going-to-church can mean practically anything, and therefore, for us, practically nothing.

Another example, perhaps more striking, because the same behavior may 'mean' exactly opposite things psychologically, is that of political-economic radicalism. If it is taken *per se*, that is to say behaviorally, discretely, out of context, we get the most confusing results when we study its relation to security feelings. Some radicals are at the extreme of security, others are at the extreme of insecurity. But if we analyze this radicalism in its total context we can learn easily that one person may be a radical because life is not good to him, because he is bitter, disappointed or frustrated, because he does not have what others have. Careful study of such people often shows them to be very hostile to their fellow men in general, sometimes consciously, sometimes unconsciously. It has been said aptly of this kind of person that he tends to perceive his personal difficulties as a world crisis. In a sense these people are not 'good' radicals, because as soon as fortune smiles upon them, or if they become personally happy rather than unhappy, they shed their radicalism as they would an old cloak. Furthermore one can understand from knowledge of their total character structure that they would be just as apt to take up some other movement, any other movement, if it served their personal emo-

tional purpose as well. Thus in some cases they may almost as easily become fascists as communists.

There is another type of radical who is a very different *kind* of individual even though he votes, behaves and talks in the same way as the one we have just described. For him, however, radicalism may have a completely different, even opposite, motivation or meaning. These people are secure, happy, personally contented people who, however, out of a deep love for their fellow men, feel impelled to improve the lot of the less fortunate, to fight injustice even if it does not touch them directly. Such people may express this urge in any one of a dozen ways: through personal philanthropy, or religious exhortation, or patient teaching, or radical political activity. Their political beliefs tend to be independent of fluctuations of income, of personal calamity and the like. In a word, radicalism is a form of expression which may come from completely different underlying motivations, from opposite types of character structure. In one person it may spring essentially from hate for his fellows, in another it may spring essentially from love for his fellows. If radicalism is studied in itself, such a conclusion is not likely to be arrived at.[2]

What remains to be said about holistic analysis can be said much better below after certain other problems have been discussed.

II. The General-Dynamic Point of View

The general point of view to which one must come in the study of personality and which is being propounded in this paper is holistic rather than atomistic, functional rather than taxonomic, dynamic rather than static, dynamic rather than causal, purposive rather than simple-mechanical. In spite

[2] A rather commonly used holistic technique (not so labelled ordinarily) is the technique of iteration used in constructing personality tests. I have also used this technique in my investigations of personality syndromes. Starting with a vaguely grasped whole, we analyze its structure into subdivisions, parts, etc. Through this analysis we discover difficulties with our original conception of the whole. The whole is then reorganized, redefined and rephrased more exactly and more efficiently and is, as before, subjected to analysis. Again this analysis makes possible a better, more precise whole, and so on.

of the fact that these opposing factors are ordinarily looked upon as a series of separable dichotomies they are not so considered by the writer. For him they tend strongly to coalesce into two unitary but contrasting world views. This seems to be true for some other writers as well, for the one who thinks dynamically finds it easier and more natural to think also holistically rather than atomistically, purposively rather than mechanically, and so on. This point of view we shall call the general-dynamic point of view.

Opposed to this interpretation is found an organized and unitary viewpoint which is simultaneously atomistic, taxonomic, static, causal and simple-mechanical. The atomistic thinker finds it much more natural to think also statically rather than dynamically, mechanically rather than purposively, etc. This general point of view I shall call arbitrarily general-atomistic. I have no doubt that it is possible to demonstrate not only that these partial views *tend* to go together but that they *must* logically go together.

In the field of psychology this general-atomistic point of view received its most consistent and detailed expression in the writings of the behaviorists. The opposite outlook, the general-dynamic, has been put forward most eloquently in the writings of the Gestalt psychologists, and, in a less systematic way, by Alfred Adler. It is not my intention here to attempt a detailed critique of behaviorism. I wish only to add a few remarks on the causality concept, an aspect of the general-dynamic theory which seems to me to be centrally important and which psychological writers have slurred or neglected altogether.

This concept lies at the very heart of the general-atomistic point of view and is a natural, even necessary, consequence of it. If one sees the world as a collection of intrinsically independent entities, there remains to be solved the obvious phenomenological fact that these entities nevertheless have to do with each other. The first attempt to solve this problem gives rise to the notion of the simple billiard ball kind of casuality in which one separate thing does something to another separate thing, but in which the entities involved

continue to retain their essential identity. Such a view is easy enough to maintain and actually seemed absolute so long as the old physics gave us our world theory. But the advance in physics and chemistry made modification necessary. For instance, the usually more sophisticated phrasing today is in terms of 'multiple causation.' It is recognized that the interrelationships holding within the world are too complex, too intricate to describe in the same way as we do the clicking of billiard balls on a table. But the answer is most often simply a complexifying of the original notion rather than a basic restructuring of it. Instead of one cause, there are many, but they are conceived to act in the same way—separately and independent of each other. The billiard ball is now hit not by one other ball, but by ten simultaneously, and we simply have to use a somewhat more complicated arithmetic to understand what happens. The essential procedures are still addition of separate entities into an 'and-sum' to use Wertheimer's phrase. No change is felt to be necessary in the fundamental envisagement of the complex happenings. No matter how complex the phenomenon may be, there is no essentially new thing happening. In this way the notion of cause is stretched more and more to fit new needs until sometimes it seems to have no relation but a historical one to the old concept. Actually, however, different though they may seem, they remain in essence the same since they continue to reflect the same world view.

It is particularly with personality data that the causality theory falls down most completely. We have already been able to demonstrate that within any personality syndrome, relationship other than causal exists. That is to say, if we had to use causal vocabulary we should have to say that every part of the syndrome is both a cause and an effect of every other part as well as of any grouping of these other parts, and furthermore we should have to say that each part is both a cause and effect of the whole of which it is a part. Such an absurd conclusion is the only one which is possible if we use only the causality concept. Even if we attempt to meet the situation by introducing the new concept of a

'circular or reversible causality,' we could not completely describe the relations within the syndrome nor the relations of the part to the whole.

Nor is this the only shortcoming of causality vocabulary with which we must deal. There is also the difficult problem of the description of the interaction or interrelation between a syndrome as a whole and all the forces bearing upon it from the 'outside.' The syndrome of self-esteem, for instance, has been shown to tend to change as a whole. That is to say, effective external influences do not affect single parts of the syndrome, but rather influence the syndrome as a whole. If we try to change Johnny's stammering and address ourselves specifically to this and only this, the chances are very great that we shall find either (1) that we have changed nothing at all, or else (2) that we have changed not Johnny's stammering alone but rather Johnny's self-esteem in general, or even Johnny-as-a-whole-individual. External influences usually tend to change the whole human being, not just a bit or a part of him.

There are yet other peculiarities in this situation which defy description by the ordinary causal vocabulary. Thus there is a phenomenon which is very difficult to describe. The nearest I can come to expressing it is to say that it is as if the organism (or any other syndrome) 'swallows the cause and creates the effect.' When an effective stimulus, a traumatic experience let us say, impinges upon the personality, there are certain consequences of this experience. But these consequences practically never bear a one to one or a straight line relationship to the original 'causal' experience. What actually happens is that the experience, if it is effective, changes the whole personality. This personality, now different from what it was before, expresses itself differently and behaves differently than before. Let us suppose that this effect would be that his facial twitch gets a little worse. Has this 10 per cent increase of the tic been 'caused' by the traumatic situation? If we say it has, then it can be shown that we must, if we wish to be consistent, say that every single effective stimulus that has ever impinged on the organism

has also caused this 10 per cent increase in the facial tic. For every experience is taken into the organism, in the same sense that food is digested and by intussusception becomes the organism itself. Is the sandwich I ate an hour ago the 'cause' of the words I now set down, or was it the coffee I drank, or what I ate yesterday, or was it the lesson in writing I got years ago, or the book I read a week ago?

It would certainly seem obvious that any important expression, such as writing a paper in which one is deeply interested, is not 'caused' by anything in particular, but is an expression of, or a creation of the whole personality which in turn is an 'effect' of almost everything that has ever happened to it. It should seem just as natural for the psychologist to think of the stimulus or cause as being taken in by the personality by means of a readjustment, as to think of it as hitting the organism and pushing it. The net result here would be, not a cause and effect remaining separate, but simply a new personality (new by however little).

Still another way of demonstrating the inadequacy for psychology of conventional cause-effect notions is to show that the organism is not a passive agent to which causes or stimuli *do* something, but that it is an active agent entering into a complex mutual relationship with the cause, doing something to it as well. For readers of the psychoanalytic literature this is a commonplace, and it is necessary only to remind the reader of the facts that we can be blind to stimuli, we can distort them, reconstruct or reshape them if they are distorted. We can seek them out or avoid them. We can sift them out and select from among them. Or finally, we can even create them if need be.

The causality concept rests on the assumption of an atomistic world with entities which remain discrete, even though they interact. The personality, however, is not separate from its expressions, effects, or the stimuli impinging upon it (causes) and so at least for psychological data it must be replaced by another conception.[3] This conception—

[3] I am aware that more sophisticated scientists and philosophers have now replaced the causality notion with an interpretation in terms of 'functional' relationships,

general-dynamics—cannot be stated simply, since it involves fundamental reorganization of viewpoint, but must be expounded step by step.

III. Definition of the Syndrome Concept

Granted that a more valid type of analysis is possible, how then can we proceed further in this study of the whole organism? It is clear that the answer to this question must depend on the nature of the organization of the data to be analyzed and we must now ask: How is the personality organized? As an antecedent to a full answer to this question must come an analysis of the syndrome concept.

In attempting to describe the interrelated characteristics of self-esteem, we borrowed the term syndrome from the field of medicine. In this field it is used to mean a complex of symptoms which are usually found to occur together, which are therefore given a unifying name and which are usually considered, even in the absence of proof, to have some common single origin, or determination. Used thus, the word has its shortcomings as well as its advantages. For one thing it usually connotes disease and abnormality rather than health or normality. We shall not use it in any such special sense, considering it rather to be a general concept which refers only to a type of organization without reference to the 'value' of this organization.

Further, in medicine, it has often been used in a merely additive sense, as a list of symptoms rather than as an organized, interdependent, structured group of symptoms. We shall of course use it in the latter sense. Finally, it has been used in medicine in a causal context. Any syndrome of symptoms was conceived to have a putative, single cause. Once something like this was found, *e.g.*, the micro-organism

i.e., A is a function of B *or* if A, then B. By so doing, it seems to me that they have given up the nuclear aspects of the concept of cause, that is to say, of necessity, and of acting upon. Simple linear coefficients of correlations are examples of functional statements which are however often used as *contrasting* with cause-effect relationships. It serves no purpose to retain the word 'cause' if it means the very opposite of what it used to mean. In any case, we are then left with the problems of necessary or intrinsic relationship, and of the ways in which change comes about. These problems must be solved, not abandoned or denied.

in tuberculosis, researchers tended to rest content and consider their labors finished. By so doing they neglected many problems that we should consider central. Examples of such problems are: (1) the failure of tuberculosis to develop more often in view of the ubiquity of the tuberculosis bacillus, (2) the frequent non-appearance of many of the symptoms of the syndrome, (3) the interchangeability of these symptoms, (4) the unexplained and unpredictable mildness or severity of the disease in specific individuals, etc. In a word, we should demand a study of *all* the factors involved in the production of tuberculosis, not only the most dramatic or most powerful single one.

Our preliminary definition of a personality syndrome is that it is a structured, organized complex of apparently diverse specificities (behaviors, thoughts, impulses to action, perceptions, etc.) which, however, when studied carefully and validly, are found to have a common unity which may be phrased variously as a similar dynamic 'meaning,' 'flavor,' function, purpose or aim.

Since these specificities have the same function or aim, they are interchangeable and may actually be thought to be psychological synonyms of one another (all 'saying the same thing'). For example temper tantrums in one child and enuresis in another may come from the same situation, *e.g.*, rejection, and may be attempts to achieve the same end, *e.g.*, attention or love from the mother. Thus, though they are quite different behaviorally, they may be identical dynamically.[4]

In a syndrome we have a group of feelings and behaviors which seem behaviorally different, or at least have different names, which, however, overlap, intertwine, interdepend, and may be said to be dynamically synonymous. We may thus study them either in their diversity 'as parts or specificities' or we may study them in their unity or wholeness. The

[4] Interchangeability may be defined in these terms of behavioral difference and dynamic similarity of aim. It may also be defined in terms of probability. If symptoms *a* and *b* have the same probability of being found or not found in syndrome *X* in an individual case, they may be called interchangeable.

problem of language is a difficult one here. How shall we label this 'unity in diversity'? There are various possibilities.

We may introduce the concept of 'psychological flavor' using as an example a dish composed of different elements and yet having a character of its own, *e.g.*, a soup, a hash, a stew, etc. In a stew we have a concoction of many elements which nevertheless has a unique flavor. Its flavor permeates all the elements of the stew and may be spoken of apart from its isolated ingredients. Or, if we take the human physiognomy we recognize readily that a man may have a misshapen nose, too small eyes, too large ears and still be handsome. (A current witticism says, "He has an ugly face, but on him it looks good.") Here again we may consider either the separate elements taken additively, or the whole which, though composed of parts, yet has a 'flavor' different from anything brought to the whole by any single part. The definition of syndrome that we might derive here is that it is organized of diversities which have a common psychological flavor.

A second approach to the problem of definitions could be in terms of 'psychological meaning,' a concept that is made much of in current dynamic psychopathology. When disease symptoms are said to have the same meaning (night sweating, loss of weight, certain sounds in breathing, etc. all mean tuberculosis) the implication is that they are all diverse expressions of the unifying putative 'cause' spoken of above. Or in psychological discussions the symptoms of feeling of isolation and of feeling of being disliked both 'mean' insecurity because they are seen as being included in this larger, more inclusive concept. That is to say two symptoms will mean the same thing if they are both parts of the same whole. A syndrome may then be defined in a somewhat circular fashion as an organized collection of diversities, all of which have the same psychological meaning. These concepts of interchangeability, flavor, and meaning, useful though they may be (for instance in the description of the pattern of a culture), have certain specific theoretical and practical difficulties which impel further search for a satisfactory phrasing.

These difficulties, I believe, can be solved only if we introduce into our considerations the functional concepts of motivations, goals, purposes, or coping aims.

From the point of view of functional psychology the unified organism is seen as always facing problems of certain kinds and attempting to solve them in various ways permitted by the nature of the organism, the culture, and the external reality. The key principle or the 'centering' of all personality organization is then seen by the functional psychologist in terms of the answers of the organism in a world of problems. The alternative phrasing is that the organization of the personality is to be understood in terms of the problems facing it and what it is trying to do about them. Most organized behaviors then must be doing something about something.[5] In the discussion of personality syndromes we should then characterize two specific behaviors as belonging to the same syndrome if they have the same coping aims with respect to a certain problem, that is to say, if they were doing the same thing about the same something. We might then say of the self-esteem syndrome, for instance, that it is the organized answer of the organism to the problem of acquiring, keeping and defending self-esteem, and similarly for the security syndrome that it is the organism's answer to the problem of gaining and keeping the love of others.

That we have here no final simple answer is indicated by the fact that the usual finding, when a single behavior is analyzed dynamically, is that it has not one, but several coping aims. Secondly, the organism ordinarily has more than one answer to an important life problem.

We might add also that purpose cannot, in any case, be made a principal characteristic of *all* syndromes. We cannot always speak of the purpose of an organization in the world

[5] There are exceptions to this rule: (1) the so-called molecular behaviors (Tolman), (2) the behaviors expressive of discouragement, defeat, or disorganization, (3) the behaviors expressive of happiness, health, or well-being. Examples are (*a*) isolated reflexes, (*b*) apathy reactions in dementia præcox or catastrophic breakdown reactions as in extreme fright or anxiety, (*c*) sheer random activity, shouting, laughing, etc. bubbling spontaneously out of a healthy, happy organism. The second and third 'mean' something in that they are surface expressions of underlying states, but they may have no purpose or coping aims.

outside the organism. The Gestalt psychologists have demonstrated abundantly the ubiquity of organization in perceived, learned and thought about materials. These materials, of course, cannot be said to have coping aims in the sense in which we have used the word. These psychologists would probably recognize characteristics in their materials that might be considered analogous or parallel to our coping aims, *e.g.*, direction, tendency to greater simplicity, tendency to least energy, etc., but these are not identical. Even though these disparities are capable of being subsumed under a common theory similar to entropy theory, we shall not make such an attempt here. As for the difficulties mentioned above, they are not unmanageable as we shall attempt to demonstrate below.

There are certain obvious similarities between our definition of a syndrome and the various definitions of a Gestalt offered by Wertheimer, Köhler, Koffka and others. The two Ehrenfels criteria are also paralleled in our definition.

Ehrenfels first criterion of an organized 'mental phenomenon' was that the separate stimuli, *e.g.*, the single notes of a melody, presented singly to a number of persons would be lacking something that would be experienced by an individual given the organized totality of stimuli, *e.g.*, the whole melody. In other words, the whole is something else than the additive sum of the parts. So also the syndrome is something else than the additive sum of its isolated reduced parts.[6] But there is also an important difference. In our definition of the syndrome, the main quality which characterizes the whole ('meaning,' 'flavor,' or aim) can be seen in any of its parts if these parts are understood not reductively, but holistically. Of course this is a theoretical statement and we may expect to find operational difficulties with it. Most of the time we shall be able to discover the flavor or aim of the specific behavior only by understanding the whole of which it is a part. And yet there are enough exceptions to this rule

[6] It is a question, however, whether the syndrome is something else than the sum of its parts taken holistically. Parts-by-reduction can add up only to an and-sum; parts-of-a-whole may, however, very well be thought of as adding up to the organized whole if the various terms of this statement are defined in a specific way. See below.

to convince us that the aim or 'flavor' inheres in the part as well as in the whole. For instance, often we can deduce or infer the whole from a single given part, *e.g.*, we hear a person laugh just once and we are almost certain that he feels insecure; or we can know much about a woman's self-esteem in general simply by her choice of clothes. It is of course granted that such a judgment from a part is usually not as valid as a judgment from the whole.

The second Ehrenfels criterion was that of transposability of elements within a whole. Thus a melody retains its identity even when played in a different key with all the single notes being different in the two cases. This resembles the interchangeability of the elements in a syndrome. Elements that have the same aim are interchangeable or dynamically synonymous with each other; so also are different notes which have the same role in a melody.[7]

In general it may be said that the Gestalt psychologists have agreed with Wertheimer's original definition, that a whole is meaningful when a demonstrable, mutual dependency exists among its parts. The statement that the whole is different from the sum of its parts, while true and very often demonstrable, is less useful as a working laboratory concept and is often felt to be too vague by psychologists of a different tradition, since the problem of definition and characterization of the whole remains even after the demonstration of its existence.

Apparently the problem of a positive definition of a Gestalt cannot be considered completely solved if we also

[7] See, however, Köhler's criticism of the Ehrenfels criteria *in* W. D. Ellis, *Source book of Gestalt psychology*, New York: Harcourt, Brace, 1939, p. 25.

In this connection Köhler has used in his writings various passages from the writings of the great James Clerk Maxwell to support the contentions of Gestalt theory. For instance, the following is from Maxwell's *A treatise on electricity and magnetism* (London: Oxford Press, 1904 (3rd ed.), Vol. 2, pp. 176–177).

"We are accustomed to consider the universe as made up of parts, and mathematicians usually begin by considering a single particle, and then conceiving its relation to another particle, and so on. This has generally been supposed the most natural method. To conceive of a particle, however, requires a process of abstraction, since all our perceptions are related to extended bodies, so that the idea of the *all* that is in our consciousness at a given instant is perhaps as primitive an idea as that of any individual thing. Hence, there may be a mathematical method in which we proceed from the whole to the parts instead of from the parts to the whole."

require that this definition be heuristic, workable and concrete and that it be capable of forcing acceptance by psychologists of a different tradition (adhering to an atomistic, mechanical world view). There are many reasons for this difficulty, but I wish to discuss only one, *viz.*, choice of data that have been used. The Gestalt psychologists have worked mostly with the organization of the phenomenal world, of the 'field' of 'materials' primarily outside the organism. (It should be noted that they usually deny this allegation.) It is, however, the organism itself which is most highly organized and intradependent. On a priori grounds the organism would seem the best place to seek for the demonstration of the laws of organization and structure. A further advantage to be derived from such a choice of data lies in the fact that the basic phenomena of motivation, purpose, aim and direction all show up much more clearly in the organism. A definition of the syndrome in terms of coping aims at once creates the possibility of unifying the otherwise isolated theories of functionalism, Gestalt psychology, purposivism (not teleology), the kind of psychodynamics espoused by the psychoanalysts and Adlerians, and the organismic holism of Goldstein. That is to say, the syndrome concept properly defined can be the theoretical basis for the unified world view (holistic, functional, dynamic and purposive) which we call the general-dynamic point of view and which we contrast with general-atomistic point of view. So could also the Gestalt concept if it were expanded as we have indicated, and if it were more centered upon the human organism and its inner motivations.

IV. Characteristics of Personality Syndromes

1. *Interchangeability.*—The parts of a syndrome are interchangeable or equivalent in the dynamic sense which has been discussed in previous paragraphs, namely in the sense that two behaviorally different parts or symptoms, since they have the same aim, can substitute for each other, can do the same job, have equal expectancy of appearing, or may be predicted with equal probability or confidence.

In a hysterical person symptoms are clearly interchangeable in this sense. In the classical cases a paralyzed leg could be 'cured' by hypnosis or other suggestion techniques but would almost inevitably be replaced later by some other symptom, a paralyzed arm perhaps. Throughout the Freudian literature as well, there are encountered many examples of symptom equivalents, *e.g.*, fear of a horse may 'mean,' or substitute for, a repressed fear of the father. In a secure person all his behavior expressions are interchangeable in the sense that they all express the same thing, *i.e.*, security. In the example of secure radicalism mentioned before, general desire to help mankind may eventuate *either* in radicalism or philanthropy or kindness to neighbors or in giving nickels to beggars and tramps. In an unknown case, of which we know only that he is secure, one may predict with great certainty that he will show *some* expression of kindness or social interest; but what exactly it will be cannot be predicted. Such equivalent symptoms or expressions may be called interchangeable.

2. *Circular determination.*—The best descriptions of this phenomenon have come from psychopathological studies, for example, Horney's concept [8] of the vicious circle which is a special case of circular determination. Horney's is one attempt to describe the continual flux of dynamic interaction within a syndrome, whereby any one part is always affecting every other part in some way and is in turn being affected by all other parts, the entire action going on simultaneously.

Complete neurotic dependence implies expectations which must be thwarted. This necessary thwarting creates anger additional to that probably already involved by the admission of weakness and helplessness implicit in complete dependence. This anger, however, tends to be directed against the very person upon whom one is dependent and through whose help one hopes to avoid catastrophe, and such anger feelings immediately lead to guilt, anxiety, fear of retaliation, etc. But these states are among the very factors which produced need for complete dependence in the first place. Examination of such a patient will show *at any one moment* most of these factors coexisting in continual flux and mutual reenforcement. While a genetic analysis may show priority of one feature over another in time, a dynamic analysis will never show this. All the factors will be equally causes and effects.

Or an individual may attempt to maintain his security by adopting an overbearing and superior attitude. He would not have taken

[8] K. Horney, *The neurotic personality of our time.* New York: Norton, 1937.

this attitude unless he felt rejected and disliked (insecure). But this very attitude makes people dislike him more, which in turn reenforces in him the necessity for overbearing attitudes, etc.

In race prejudice we can see this type of circular determination very clearly. The haters will point to certain undesirable traits that excuse their hatred, but these very traits in the disliked group are almost all the product in part of the hatred and rejection.[9]

If we were to use the more familiar cause-effect vocabulary to describe this concept, we should say that A and B cause each other and are effects of each other. Or we could say that they were mutually dependent or mutually supportive or reenforcing variants.

3. *Tendency of the well organized syndrome to resist change or to maintain itself.*—No matter what the level of security may be, it is difficult either to raise or to lower it. This phenomenon is something like that described by Freud as resistance but has a much wider and more general application. Thus we find some tendency to hang on to the life style in the normal as well as in the abnormal person. The person who tends to believe that all people are essentially good will show the same resistance to change of this belief as will the person who believes all people are essentially bad. Operationally this resistance to change may be defined in terms of the difficulty experienced by the psychological practitioner or experimenter when he attempts to raise or lower an individual's security level.

Personality syndromes can sometimes maintain a relative constancy under the most surprising conditions of external change. There are many examples of the maintenance of security feelings in emigrés who have undergone the most grueling and harrowing experiences. Studies of morale in bombed areas also give us proof of the surprising resistance that most healthy people have to external horrors. Sta-

[9] We are describing in these examples only synchronous dynamics. The question of the origin or determination of the whole syndrome, of how the circular determination ever came to be in the first place is a historical question and will yield only to genetic or historical analysis. Even if such a genetic analysis shows one particular factor to have been first in the chain, this in no way guarantees that this same factor will have basic or prior importance in the dynamic analysis. The question of historical determination will be discussed in other publications.

tistics show that depressions and wars do not make for any large increase in the incidence of psychoses.[10] Changes in the syndrome of security are usually in great disproportion to changes in the environment and sometimes there seems to be almost no personality change at all.

A German emigré, formally a man of great wealth, came to the United States completely stripped of all his goods. He was diagnosed, however, as a secure personality. A careful questioning showed that his underlying philosophy of human nature had not changed. He still felt that it was essentially sound and good if given a chance, and that the nastiness he had witnessed was explicable in various ways as an externally caused phenomenon. Interviews with people who had known him in Germany showed that he had been about the same kind of person before his financial downfall.

Many other examples are seen in the resistance of patients to psychotherapy. Sometimes there can be found in a patient, after a period of analysis, a surprising degree of insight into the false basis and the evil consequences of certain of his beliefs. Even so he may hang on to his beliefs with a determined tenacity.

4. *Tendency of the well organized syndrome to reestablish itself after change.*—If a syndrome level has been forced to change, it is often observed that such shift is only temporary. For instance, a traumatic experience very frequently has only a passing effect. There may then be a spontaneous readjustment back to the previous status quo. Or else the symptoms created by the trauma are nullified with especial ease.[11] Sometimes also this tendency of the syndrome can be inferred as one of the processes in a larger system of changes in which other syndrome tendencies are also involved.

The following case is typical. A sexually ignorant woman was badly shocked by her first experience after marriage to an equally ignorant man. There was in her a definite shift in the level of the

[10] Such data are usually misinterpreted, since they are often used to refute any environmental or cultural theory of determination of psychopathy. Such a contention simply shows a misunderstanding of dynamic psychology. The real claim that is made is that psychopathy is immediately the result of internal conflicts and threats rather than external calamities. Or at least that external calamities have dynamic influence on the personality only in so far as they relate to the main goals of the individual and to his defensive system.

[11] D. M. Levy, Release therapy, *Amer. J. Orthopsychiat.*, 1939, 9, 713–736.

whole security syndrome, *i.e.*, from average to low security. Investigation showed change as a whole in most aspects of the syndrome, in her external behavior, philosophy of life, dream life, attitude toward human nature, etc. At this point she was given books to read, the situation was discussed and she was given some simple advice. Slowly she changed back, becoming steadily more secure, but she never quite attained her former level. There remained some slight but permanent effect of her experience, perhaps maintained in part by a rather selfish husband. What was more surprising than this permanent after effect was the strong tendency in spite of everything to think and believe as she had before she was married. A similar picture of sharp change with slow but complete recovery was seen upon remarriage in a woman whose first husband became insane.

It is a tribute to the ubiquity of this tendency that our ordinary expectations in respect to friends who are regarded as normally healthy, is that they can recover from any shock at all if only given enough time. The death of a wife or a son, financial ruin, and other such basic traumatic experiences may throw individuals badly off balance for a while, but they usually recover almost wholly. It is only a chronically bad external situation that is able to create permanent changes in the healthy character structure.

5. *Tendency of the syndrome to change as a whole.*—This tendency, already discussed above, is perhaps the easiest of all to see. If the syndrome changes at all in any part, the right kind of investigation will practically always show some other concomitant changes in the same direction in other parts of the syndrome. Often enough, such concomitant changes may be seen in almost *all* parts of the syndrome. The reason these changes are so often overlooked is simply that they are not expected and therefore not looked for.

It should be emphasized that this tendency to holistic change, like all the other tendencies we have spoken of, is just that—a tendency and not a certainty. There have been cases in which a particular stimulus seemed to have a specific and localized effect with no detectable generalized effect. These cases are rare, however, if we exclude the obviously superficial derangements.

In an experiment on raising self-esteem by external means a woman was instructed to behave in an aggressive fashion in about twenty specific and rather trivial situations. (For instance, she was to insist on a certain brand concerning which her grocer had always overruled her.) She followed instructions and a wide investigation of personality changes was made three months later. There was no doubt that there had been a generalized shift in her self-esteem. For instance, the character of her dreams had changed. She had bought form-fitting and revealing clothes for the first time. Her sexual behavior had become spontaneous enough for her husband to notice the change. She had gone swimming with other people for the first time, whereas she had always before been too bashful to appear in a swimming suit. And she felt very confident in a variety of other situations. These changes were not suggested, but were spontaneous changes of whose significance she was not at all aware.

A very insecure woman, seen a few years after her very successful marriage, showed a general shift upward in security. When I had first seen her (before her marriage) she had felt alone, unloved and unlovable. Her present husband had finally been able to convince her that he loved her—a difficult task in the case of an insecure woman—and they were married. Now she felt not only that her husband loved her, but also that she was *lovable*. She accepted friendships whereas she had not been able to before. Most of her generalized hatred against human beings had gone. She had developed a kindness and a sweetness of which there was little trace when I had first seen her. Certain specific symptoms had lessened or disappeared—among others a recurring nightmare, a fear of parties and other groupings of strangers, chronic slight anxiety, a specific fear of the dark, certain undesirable power and cruelty fantasies.

6. *The tendency to internal consistency.*—Even though a person is mostly insecure there may yet persist for various reasons a few specific behaviors, beliefs or feelings that are characteristic of security. Thus, although a very insecure person more often than not has chronic nightmares, anxiety dreams or other unpleasant dreams, still in a fair percentage of all such individuals the dream life is not unusually unpleasant. In such individuals, however, relatively slight changes in the environment will induce such unpleasant dreams. There seems to be a special tension upon these

inconsistent elements always acting to pull them into line with the rest of the syndrome.

People with low self-esteem tend to be modest or bashful. Thus it is usual that many of them will either not appear in a swimming suit or will feel very self-conscious if they do. One girl, however, definitely low in self-esteem, was not only observed at the beach in a swimming suit, but in one that was definitely scanty and revealing. Later a series of interviews revealed that she was very proud of her body which she considered 'perfect'—an opinion which, for a woman of low self-esteem, is, like her behavior, very unusual. Through her report it was evident, however, that this attitude toward bathing was inconsistent in that she invariably felt self-conscious, that she always had a robe nearby to cover herself with and that anyone staring at her too openly could drive her from the beach altogether. She had been convinced by various external opinions that her body was attractive; she felt intellectually that she ought to behave a certain way about it, tried very hard to behave in this way, but found it difficult to do so because of her character structure.

Specific fears are often found in very secure persons who are not at all generally fearful. These fears can often be accounted for by specific conditioning experiences. It is very easy to get rid of these fears in such people, I have found. Simple reconditioning, the force of example, exhortation to be strong-willed, intellectual explanation and other such superficial psychotherapeutic measures are often quite sufficient. These simple and external techniques, however, ordinarily fail miserably with fears in definitely insecure people. We might say that the fear which is inconsistent with the rest of the personality is easily removed; the fear which is consistent with the rest of the personality is very tenacious. In other words, a person who is insecure *tends* to become more perfectly or consistently insecure; a person who is high in self-esteem *tends* to become more consistently high in self-esteem.

7. *The tendency to extremeness of the syndrome level.*—Side by side with the conserving tendencies we have already described, there is at least one opposing force deriving from the internal dynamics of the syndrome which favors change rather than constancy. It is the tendency for a fairly insecure

person to become extremely insecure, for a fairly secure person to become extremely secure.[12]

In a fairly insecure person every external influence, every stimulus impinging on the organism is somewhat more apt to be interpreted insecurely rather than securely. For example, a grin is apt to be seen as a sneer, forgetfulness is apt to be interpreted as insult, indifference is apt to be seen as dislike and mild affection as indifference. In such a person's world then, there are more insecure influences than there are secure ones. We might say that the weight of evidence for him is on the side of insecurity. And so he is pulled steadily, even though slightly, in the direction of more and more extreme insecurity. This factor is of course reenforced by the fact that an insecure person tends to behave insecurely, which encourages people to dislike and reject him, which makes him more insecure, which makes him behave still more insecurely—and so on in a vicious circle. Thus he tends, because of his inner dynamics, to bring about just what he fears most.

The prize example can be seen in jealous behavior. It springs from insecurity and practically always breeds further rejection and deeper insecurity. A man explained his jealousy as follows: "I love my wife so much that I am afraid that I would collapse if she left me or did not love me. Naturally I am disturbed by her friendliness with my brother." Therefore, he took many measures to stop this friendliness, all of them foolish, so that he began to lose the love of both his wife and his brother. This of course made him even more frantic and jealous. The vicious circle was broken with the aid of a psychologist who taught him first not to behave jealously even if he felt that way, and then started the more important task of relieving the general insecurity.

8. *Tendency of the syndrome to change under external pressures.*—It is very easy when preoccupied with inner dynamics of syndromes to forget temporarily that all syndromes are of course responsive to the external situation. This obvious fact is mentioned here only for the sake of completeness and as a reminder that the personality syndromes of the organism are not isolated systems.

[12] This tendency is closely related to the previously described tendency toward greater internal consistency.

9. *Syndrome variables.*—The most important and most obvious variable is that of *syndrome level.* A person is either high, middle, or low in security, high, middle, or low in self-esteem. We do not necessarily imply that this variation is on a single continuum; we imply only variation from much to little, from high to low. *Syndrome quality* has been discussed chiefly with respect to the self-esteem or dominance syndrome. In the various species of infra-human primates the phenomenon of dominance may be seen in all of them but it will have a different quality of expression in each. In the human being with high self-esteem we have been able to differentiate at least two qualities of high self-esteem that we have chosen to designate on the one hand as strength and on the other hand as power. A person with high self-esteem, who is also secure, shows this feeling of strength or self-confidence in a kind, cooperative and friendly fashion. The person who is high in self-esteem but who is also insecure shows it not so much in helping weaker people as in dominating them and hurting them. Both individuals have high self-esteem but show it in different ways depending upon other characteristics of the organism. In extremely insecure people there are many way in which this insecurity can express itself. For instance, it may have the quality of seclusiveness and withdrawal (if he is low in self-esteem), or it may have the quality of hostility, aggressiveness and nastiness (if he is high in self-esteem).

10. *Cultural determination of syndrome expression.*—Certainly the relationships between culture and personality are too profound and too complex to treat briefly. More for the sake of completeness than for any other reason it must be pointed out that in general the paths by which the main goals in life are achieved (more than the goals themselves) are often determined by the nature of the particular culture. The ways in which self-esteem may be expressed are in large part, although not completely, culturally determined. The same is true for the love relations. We win the love of other people and express our affection for them through culturally approved channels. The fact that in a complex society status

roles are also in part culturally determined will often shift the expression of personality syndromes. For instance, men with high self-esteem in our society are allowed to express this syndrome much more overtly and in many more ways than are allowed to women with high self-esteem. So also children are given very few opportunities for the direct expression of high self-esteem. It should also be pointed out that there is often a culturally approved syndrome level for each of the syndromes, *e.g.*, security, self-esteem, sociality, activity. This fact can be seen most clearly in cross cultural comparisons and in historical comparisons. For instance, the average Dobu citizen not only is, but also is expected to be more hostile than the average Arapesh citizen. The average woman today is expected to be higher in self-esteem than the average woman one hundred years ago.[13]

[13] Since this paper went to press, I have belatedly read two very important contributions to the questions raised in the present paper. The book by A. Angyal, *Foundations for a Science of Personality*, New York: Commonwealth Fund, 1941, not only deals with the same problems but comes to very similar conclusions, indicating that these conclusions are forced by the facts rather than arising from personal predilection. Also the monograph by R. Barker, T. Dembo and K. Lewin should be strongly recommended for its minute analyses of the nature of wholes, parts, interdependence, etc. It is *Frustration and Regression*, University of Iowa Studies in Child Welfare, 1941, 18, no. 1.

A POSTSCRIPT CONCERNING INTERVENING VARIABLES

BY CLARK L. HULL

Institute of Human Relations

Yale University

Since the publication of my recent contribution to the Unity of Science symposium on psychology and scientific method (1), my attention has been called to an inaccuracy and omission which are so serious as to require a special note. I neglected to cite the outstanding contribution to the subject of intervening variables, E. C. Tolman's address as President of the American Psychological Association (2). In attempting to show that Tolman, along with a number of other writers, uses intervening variables, I improvised an inadequate diagram from memory, neglecting to consult the carefully constructed diagrams which he himself had already published (2, pp. 16, 19, 26). This occurred because I was under a great pressure of work at the time of the preparation of the manuscript, which had to be in at a certain date in order to be published with the others.

It is hoped that the readers of the PSYCHOLOGICAL REVIEW will understand that the diagrams which I employed were not intended to be complete representations of any of the systems referred to; the figures were merely designed to show that the several authors mentioned really employed intervening variables. And while a certain amount of injustice was done all of the authors, this was especially true of Tolman because his own statement was not cited. While it is too much to hope that the present note will correct all the resulting misunderstanding, I very much wish that it might.

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Psychological Review—Northwestern University, Evanston, Illinois; American Psychological Association, Inc. Subscription $5.50. 540 pages annually. Edited by Herbert S. Langfeld. Bi-monthly. General psychology. Founded 1894.

Psychological Monographs—Northwestern University, Evanston, Illinois; American Psychological Association, Inc. Subscription $6.00 per volume. 500 pages. Edited by John F. Dashiell. Without fixed dates, each issue one or more researches. Founded 1895.

Psychological Bulletin—Northwestern University, Evanston, Illinois; American Psychological Association, Inc. Subscription $7.00. 665 pages annually. Edited by John E. Anderson. Monthly (10 numbers). Psychological literature. Founded 1904.

Archives of Psychology—New York, N. Y.; Columbia University. Subscription $6.00 per volume. 500 pages. Edited by R. S. Woodworth. Without fixed dates, each number a single experimental study. Founded 1906.

Journal of Abnormal and Social Psychology—Northwestern University, Evanston, Illinois; American Psychological Association, Inc. Subscription $5.00. 360 pages annually. Edited by Gordon W. Allport. Quarterly. Founded 1906.

Journal of Educational Psychology—Baltimore, Md.; Warwick & York. Subscription $6.00. 720 pages annually. Edited by J. W. Dunlap, P. M. Symonds, and H. E. Jones. Monthly except June to August. Founded 1910.

Psychoanalytic Review—New York, N. Y.; 64 West 56th St. Subscription $6.00. 500 pages annually. Edited by Smith Ely Jelliffe. Quarterly. Founded 1913.

Journal of Experimental Psychology—Northwestern University, Evanston, Illinois; American Psychological Association, Inc. Subscription $14.00 per annum (2 volumes). 1040 pages annually. Edited by Samuel W. Fernberger. Monthly. Founded 1916.

Journal of Applied Psychology—Northwestern University, Evanston, Illinois; American Psychological Association, Inc. Subscription $6.00. 480 pages annually. Edited by Donald G. Paterson. Bi-monthly. Founded 1917.

Journal of Comparative Psychology—Baltimore, Md.; Williams & Wilkins Co. Subscription $14.00 per annum (2 volumes). 1000 pages annually. Edited by Roy M. Dorcus, Knight Dunlap and Robert M. Yerkes. Bi-monthly. Founded 1921.

Comparative Psychology Monographs—Baltimore, Md.; Williams & Wilkins Co. Subscription $6.00 per volume. 400 pages. Edited by Roy M. Dorcus. Without fixed dates, each number a single research. Founded 1922.

Genetic Psychology Monographs—Provincetown, Mass.; The Journal Press. Subscription $7.00. 500 pages annually. Edited by Carl Murchison. Bi-monthly. Each number one complete research. Child behavior, animal behavior, and comparative psychology. Founded 1925.

Psychological Abstracts—Northwestern University, Evanston, Illinois; American Psychological Association, Inc. Subscription $7.00. 700 pages annually. Edited by Walter S. Hunter and H. L. Ansbacher. Monthly. Abstracts of psychological literature. Founded 1927.

Journal of General Psychology—Provincetown, Mass.; The Journal Press. Subscription $14.00 per annum (2 volumes). 1000 pages annually. Edited by Carl Murchison. Quarterly. Experimental, theoretical, clinical, and historical psychology. Founded 1927.

Journal of Social Psychology—Provincetown, Mass.; The Journal Press. Subscription $7.00. 500 pages annually. Edited by John Dewey and Carl Murchison. Quarterly. Political, racial, and differential psychology. Founded 1929.

Psychoanalytic Quarterly—Albany, N. Y.; 372-374 Broadway. Subscription $6.00. 560 pages annually. Edited by Bertram D. Lewin and others. Quarterly. Founded 1932.

Character and Personality—Durham, N. C.; Duke University Press. Subscription $2.00. 360 pages annually. Edited by Karl Zener. Quarterly. Founded 1932.

Journal of Psychology—Provincetown, Mass.; The Journal Press. Subscription $14.00 per annum (2 volumes). 800-1200 pages annually. Edited by Carl Murchison. Quarterly. Founded 1936.

Psychometrika—University of Chicago, Chicago, Ill.; Psychometric Society. Subscription $10.00. 320 pages annually. Edited by L. L. Thurstone and others. Quarterly. Quantitative methods in psychology. Founded 1936.

Psychological Record—Bloomington, Ind.; Principia Press. Subscription $4.00. 500 pages annually. Edited by J. R. Kantor and C. M. Louttit. Without fixed dates, each number a single research. General psychology. Founded 1937.

Journal of Consulting Psychology—Lancaster, Penn.; Science Printing Co. Subscription $3.00. 240 pages annually. Edited by J. P. Symonds. Bi-monthly. Founded 1937.